SOCIAL PHYSIQUE ANXIETY, PREGNANCY AND EXERCISE

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ABSTRACT

The purpose of this study was to examine SPA and exercise during and after pregnancy. Women enrolled in community ante-natal classes participated in the investigation (Exercisers n = 36; Non-exercisers n = 17). Participants completed the Social Physique Anxiety Scale (SPAS), Reasons for Exercise Inventory (REI), Exercise Behaviours and Preferences Scale and a modified Body Esteem Scale, and provided general demographic and exercise data during pregnancy and 6 weeks and 3 months post-pregnancy. Repeated measures ANOVA indicated that participant reasons for exercise changed significantly over the course of pregnancy from intrinsic to extrinsic, reflecting self-presentational motives. SPA has been found to be positively related to self-presentational motives in previous research, although significant results were not replicated in this study.

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CHAPTER ONE

Introduction

1.1 Exercise

The benefits of exercise for health and well-being have been extensively documented (Baddeley, 1999; Davis, Bull, Roscoe & Roscoe, 1991; Wilfley & Kunce, 1986). Much research exists to substantiate both the physiological and psychological health benefits of physical exercise (Goodwin, Astbury & McMeeken, 2000; Koniak-Griffin, 1994; Labbe, Welsh & Delaney, 1988; Marquez-Sterling, Perry, Kaplan, Halberstein & Signorile, 2000; Williams & Cash, 2001). Such effects have been found with a wide range of normal and clinical populations, including rehabilitation clients, adult women, college students, juvenile offenders and young boys (Wilfley & Kunce, 1986).

Physiologically exercise can increase blood flow, oxygen transportation capacity, fat loss and muscle tone (Lantz, 1991; Lox & Treasure, 2000; Wilfley & Kunce, 1986). Exercise can also increase cardiovascular endurance and improve digestion (Wilfley & Kunce, 1986). Other physiological benefits of exercise include a decreased risk of coronary heart disease and osteoporosis, lowered body fat and cholesterol levels, along with weight control and lower blood pressure levels (Rankin, 2002). These physiological adaptations may also influence mortality, morbidity and longevity (Rankin, 2002).

In addition to the positive physiological benefits of exercise, numerous empirical investigations exist that extol the psychological and emotional benefits of exercise also. Exercise can decrease anxiety and assist in the reduction of depression and the improvement of mood (Lantz, 1991; Lox & Treasure, 2000; Wilfley & Kunce, 1986; Rankin, 2002). Exercise has also been found to increase perceptions of coping ability,

self-confidence, and self-satisfaction and improve body image and self-esteem (Cash & Pruzinsky, 2002; Rankin, 2002).

In a review of literature investigating the relationship between psychological and emotional well-being and exercise, Leary and Kowalski (1990) found that 70% of studies reported significant improvements on the psychological constructs under consideration as a result of participation in an exercise programme. Labbe, Welsh and Delaney (1988) reported that depression and anxiety may be positively affected by exercise and found that results were consistent across studies and over time.

Exercise appears to be beneficial in helping people cope more effectively and reduce emotional reaction to stressful life events (Rankin, 2002). A meta-analysis of these studies suggest that exercise either acts as a coping strategy or serves as an inoculator, enabling individuals to respond more effectively to psychological stress (Rankin, 2002). Exercise also seems to be particularly beneficial to those experiencing higher levels of stress (Labbe et al, 1988; Wilfley & Kunce, 1986). Results found that physical self-concepts increased significantly and tension levels decreased significantly in more stressed individuals than in less stressed individuals (Wilfley & Kunce, 1986). Positive results in stress reduction and improved coping ability have also been found in previously sedentary people who increased their activity levels (Rankin, 2002).

Physical activity is an effective way of improving body image and research has found clear evidence that physical activity contributes to a more positive attitude toward the body (Grogan, 1999; Lantz, 1991). Negative body image is associated with poor self-esteem and anxiety, specifically anxiety that others are evaluating a person's physique negatively (Lantz, 1991). Such anxiety and poor self-esteem are often found in

conjunction with depression (Lantz, 1991). Sedentary female, young male and obese teenage populations have all shown significant positive correlations between exercise participation and improved body image (Lantz, 1991). Berscheid, Walster and Bohrnstedt (1973) also found a direct relationship between self-esteem and body image in research with females.

It is known that exercise has wide ranging physiological and psychological benefits for a diverse array of people, which influence both physical and mental health. Such benefits include reduced risk of many common diseases, lower blood pressure levels and greater weight control along with improved self-image, mood and confidence, and decreased incidences of anxiety and depression.

1.1.1 Exercise and Women

Evidence suggests that exercise also has additional physiological and psychological benefits for women. Recent reviews of empirical evidence support the promotion of exercise to improve bone density, reduce levels of lower back pain, pelvic pain and headaches and reduce the risk of breast cancer in women (Rankin, 2002). Labbe et al's (1988) research with a non-clinical population of exercising women suggested that exercise can affect psychological functioning. Depression and anxiety levels were reduced and actual physical ability also improved. It has been concluded that women who exercise regularly are likely to be more comfortable with physical activity and have reduced anxiety and improved self-concept and self-esteem. It is generally believed that exercise leads to an improved quality of life and the adoption of other healthy lifestyle behaviours (Rankin, 2002).

1.2 Social Physique Anxiety

Dissatisfaction with the physique can be a prime motivating factor to exercise, yet also a barrier (Lantz, 1991). The very things that motivate people to exercise, such as dissatisfaction with their physique, are also the same things that prevent them from participating in exercise activities. It is suggested that this is because concern about the appearance of the physique during exercise may deter people from participating in exercise programmes (Lantz, 1991).

Body image is defined as the picture of our body we form in our mind (Hart, Leary & Rejeski, 1989; Lantz, 1991; Strang & Sullivan, 1985). Body image includes attitudes, perceptions and feelings held about the body (Silberstein, Striegel-Moore, Timko & Rodin, 1988).A concept similar to body image, is that of body esteem or satisfaction. Body esteem refers to the degree of satisfaction an individual has regarding his or her own body (Lantz, 1991; Secord & Jourard, 1953). Beliefs about the body are culturally defined and relate to patterns of social relations within society. Cultural values influence perceptions and behaviour towards others. Others opinions are very important and impact how we feel about our own body. Social comparison, feedback on physical appearance and perceptions of others evaluations help form our body image (Cash & Pruzinsky, 2002). The vital role of body image means it has the potential to dramatically influence quality of life. Human identity cannot be separated from the body and body image affects our thoughts, emotions and behaviours in everyday life (Cash & Pruzinsky, 2002).

In western society men and women differ in their perception of and satisfaction with their bodies and the different characteristics of male and female body esteem appear to reflect culturally defined patterns of Western society. The physical self (physique) plays

a prominent role in current Western cultural ethos, particularly for women (Davies & Wardle, 1994; Grogan, 1999).

Male body esteem is characterised by upper body strength, physical attributes which contribute to body symmetry and general physical health (Lantz, 1991). For women body esteem comprises of sexual attractiveness (satisfaction with attractiveness and sexuality), weight concern and control, satisfaction with body parts and proportions and general health and physical conditioning (stamina and strength) (Lantz, 1991; Silberstein et al, 1988). Grogan (1999) found that women are most concerned about the stomach, hips and bottom and express most dissatisfaction with these areas along with muscle tone and weight.

Preoccupation with weight is characteristic of women and gender relations in the western world. Western women are judged more on appearance than men (Bain, Wilson & Chaikind, 1989). Socio-cultural explanations of weight concern have been found to include three factors: stigma associated with obesity; idealisation of thinness in females; and the role of physical appearance as a core aspect of femininity (Cash & Pruzinsky, 2002). Western society expects women to be thin in order to be attractive and there are consequences for those who are not, both personal and social.

Others' judgements are affected in part by their perceptions of our physical characteristics. Self-presentation is the selective presentation and omission of aspects of the self to create desired impressions and avoid undesired impression with specific people in a specific social encounter (Crawford & Eklund, 1994). Self-presentation is the process by which individuals monitor and attempt to control the impressions others may form of them. Individuals are motivated to make positive impressions because of

the variety of social and material outcomes associated. People want to be perceived as healthy, attractive and fit, rather than unhealthy, overweight and unattractive. Self-presentational practices are influenced by body image.

Self-presentational motivation processes, relating to body image, are now being used to explore the relationship between body image and exercise. As exercise participation occurs in social situations and many of the reasons given for exercising reflect self-presentational motives, it seems reasonable that self-presentational aspects may influence exercise behaviour (Crawford & Eklund, 1994).

Negative feelings about the body are associated with anxiety and feelings of insecurity (Secord & Jourard, 1953). It has been demonstrated that they are also commensurate with the evaluation of the self (Lantz, 1991; Secord & Jourard, 1953) and consequently one's level of self-esteem (Silberstein et al, 1988).As it is socially important to make a good impression, people become anxious when they feel unable to make such an impression, as they generally wish to be viewed as physically attractive, or at least not as unattractive (Hart, Leary & Rejeski, 1989). People want to avoid losses in social approval too. Such potential losses may occur when individuals feel incapable of making the desired impression. So they may abstain from or avoid situations where such concerns are highlighted in order to minimise any loss. Such impression management behaviour is believed to result in social physique anxiety (SPA), a term introduced by Hart et al (1989). SPA is considered pertinent to understanding exercise behaviour.

Social anxiety is an affective consequence that may be experienced when people doubt their ability to make desired impressions on others. Social physique anxiety (SPA) is a

subtype of social anxiety that is associated with concerns that one's body may be negatively evaluated. SPA occurs as a result of the prospect or presence of interpersonal evaluation involving one's physique. The concept of SPA was introduced by Leary (1992) to represent the anxiety one feels in response to others' evaluations of their physiques and is measured by the Social Physique Anxiety Scale (SPAS). SPA represents concerns about body proportions, structure and muscle tone rather than concerns about one's ability to perform specific physical tasks. SPA extends research on body consciousness, which is awareness of public and private aspects of the physical self or the desire to look better in the eyes of others, and has been shown to be a driving force in exercise motivation (Frederick & Morrison, 1996).

Motivations for exercise participation fall into two groups, intrinsic and extrinsic. Intrinsic motivations include health, fun, enjoyment and challenge (Frederick & Morrison, 1996). Extrinsic reasons are characterised by direct or indirect pressure from others. They arise from socio-cultural or interpersonal pressures to conform to an ideal standard weight and reflect fitness and appearance motives. Intrinsic motives foster positive attitudes leading to increased self-esteem and decreased anxiety. However extrinsic motives appear to be associated with an attitude of stress and increased levels of anxiety. Motives for exercise participation have also been shown to relate to a variety of stable personality constructs, including anxiety (Frederick & Morrison, 1996). Many of the reasons given for participating in exercise clearly reflect self-presentational motives (Crawford & Eklund, 1994). Regular exercise can enhance one's appearance by reducing weight or body fat and making one appear healthier. Many people are motivated to exercise because of these self-presentational and extrinsic benefits (Leary, 1992).

Positive correlations have been found between SPA and weight control, body tone and physical attractiveness or appearance. These motives are related to the development or maintenance of physical qualities (Crawford & Eklund, 1994; Eklund & Crawford, 1994; Frederick & Morrison, 1996) and reflect self-presentational or extrinsic reasons for exercise. Etzbach and Smith (2001) proposed several theoretical antecedents to SPA: public self-consciousness, perceived social acceptance and body satisfaction. Etzbach and Smith (2001) study of adolescent exercise motivation found that the proposed antecedents did in fact result in the predicted high levels of SPA, consequently resulting in higher extrinsic motivation scores and lower exercise levels. Reasons not related to self-presentational motives such as fitness, mood enhancement and social contact, were not associated with increased levels of SPA (Eklund & Crawford, 1994).

Physical activity is an effective way of improving body image (Lantz, 1991). However it is unknown what effect body image has on exercise participation. Research shows that body composition, self motivation, attitudes and beliefs about the body and self influence exercise behaviour (Lantz, 1991) and Hart et al (in Lantz, 1991) argue that the manner in which a person perceives their body can affect exercise choices.

SPA occurs as a result of the prospect or presence of interpersonal evaluation involving one's physique (p.96, Hart et al, 1989). This type of behaviour may affect exercise patterns. Physique related anxiety might stimulate people to make protective self-presentational actions in social situations (Crawford & Eklund, 1994). Despite wanting to improve physical appearance through exercise, exercise behaviour may be constrained by fears of physique-related negative evaluation. On the one hand, dissatisfaction with the physique is a primary extrinsic motivator of exercise behaviour, yet concerns about the appearance of the physique during exercise and the prospect of

negative evaluation from others, may deter people from participating in exercise programmes.

1.2.1 Social Physique Anxiety and Exercise

Hart et al (1989) developed the 12-item SPA scale (SPAS) to assess the degree of anxiety that individuals experience as a function of other people's evaluation of their physique. Many people may rarely experience SPA, they think that others view their bodies favourably or are disinterested in others reactions to their physiques. Other individuals, however, are chronically concerned with how others view their physiques, either because their bodies are objectively unattractive or because they hold an unrealistically negative perception of their physique (Hart et al, 1989). Exercise occurs in social contexts and therefore self-presentational aspects are relevant to understanding exercise behaviour (Eklund & Crawford, 1994) as the choice of exercise activity, setting and attire may be constrained by self-presentational insecurities.

Compared to people who are low in SPA, people who suffer from high levels of SPA are likely to avoid situations where potential negative evaluation may occur, become anxious if their physiques are under scrutiny and able to be seen, avoid activities and clothing that accentuates their physique, and attempt to improve their physiques using harmful methods.

Exercise settings emphasising or de-emphasising the physique have been related to SPA levels (Eklund & Crawford, 1994). It appears that SPA influences exercise behaviour through an interaction with situational factors related to the display of the physique (Crawford & Eklund, 1994). SPA has been found to be negatively associated with settings emphasising physique and positively associated with settings minimising the

physique (Crawford & Eklund, 1994). Leary (1992) found that people who are worried about their physiques are unwilling to exercise in certain environments, particularly public settings and preferred private exercise settings such as the home. Spink (1992) also found that high scorers on the SPAS preferred to exercise in private settings such as the home compared to public settings such as a club or gym.

Individuals with high SPA scores also preferred to participate in exercise or fitness type activities as opposed to activities that exposed the physique more, such as jogging, aerobics classes or swimming and team or individual sports (Frederick & Morrison, 1996; Leary, 1992). Williams and Cash (2001) found that a weight training programme significantly improved participants' evaluations of their physical self and body satisfaction along with decreased SPA scores, which did not occur for matched control participants. The participants had more initial body dissatisfaction than did controls, pointing to body dissatisfaction as a motivating factor for participation in body-improvement activities such as weight training.

SPA responses have also been found to be negatively associated with exercising dressed in revealing aerobic wear and positively associated with less revealing attire such as shorts and t-shirts (Eklund & Crawford, 1994). Such findings support suggestions that SPA is related to body image satisfaction and may influence exercise behaviour.

Commitment to exercise has been associated with SPA. Finkenburg, DiNucci, McClune, Chenette and McCoy (1998) found that the group with the highest level of commitment had the lowest SPA levels and vice versa. Indirect evidence would suggest that experienced exercisers are lower in SPA than inexperienced exercisers on average (Eklund, 1998a). Inexperienced exercisers report greater anxiety specific to the

physique in social exercise settings than experienced exercisers. However Frederick and Morrison (1996) found that individuals with high SPA scores were high adherers, indicated by the number of days per week spent exercising. It has also been found that the frequency and duration of exercise is not related to SPA (Eklund & Crawford, 1994).

1.2.2 Social Physique Anxiety, Exercise and Women

Women are more likely to develop anxiety about their body because of the social importance given to the female figure (Lantz, 1991). Beauty, thinness and physical attractiveness are seen as central components of the female gender role (Cash & Pruzinsky, 2002). These components confirm a woman's identity as female and affirm the same to others. Studies repeatedly show that women over estimate their current figure size as a result of pressure to attain society's ideal physique (Lantz, 1991) and that body weight is a strong predictor of body dissatisfaction (Cash & Pruzinsky, 2002). This perceived discrepancy often results in undue anxiety about the self (Lantz, 1991). Such anxiety and the commonly associated poor self-esteem are often found in conjunction with depression (Goodwin, Astbury & McMeeken, 2000; Lantz, 1991). This negative view of the self is also often paralleled by extreme self-consciousness (Lantz, 1991). The recent research associating body image with SPA appears particularly relevant for women, especially considering the importance given by women to self-presentational reasons for exercising.

Lantz, Hardy and Ainsworth (1997) reported that SPA was negatively related to exercise behaviour. Individuals with higher SPAS scores were less likely to engage in exercise situations where their bodies may be evaluated negatively. Research by Yin (2001) found that women high in SPA, who reported dissatisfaction with their body

image, were heavier than others and preferred to exercise in a women only area of a gym. Research by Frederick and Morrison (1996) and Spink (1992) found that women with high levels of SPA preferred to exercise in private settings. Crawford and Eklund (1994) and Spink (1992) also found that females high in SPA preferred to exercise in private rather than public settings.

Crawford and Eklund (1994) also confirmed that self-presentational (extrinsic) reasons for exercise were positively associated with SPA in women. Reasons that were not as clearly self-presentational e.g. health, enjoyment, fitness, were not associated with SPA. Women with high levels of SPA report more stress during physique evaluations, experience more negative thoughts about their body's appearance and feel less comfortable having their body evaluated than women with low levels of SPA (Crawford & Eklund, 1994). They protect themselves by only presenting the parts of themselves they are happy with. Cash and Pruzinsky (2002) also report that women who exercise for fitness related motives express greater body satisfaction than those exercising for appearance related motives. This may be because society does not have strict ideals regarding fitness for women as opposed to appearance ideals.

Research by Berscheid et al (1973) found a direct relationship between self-esteem and body image. They found that female self-esteem was strongly related to satisfaction with the face and the mid-torso area, reflecting their concern with looking pretty and slim (Berscheid et al, 1973) and the value placed upon being the same as the ideal physique so often displayed in the media. Seggar, McGammon and Cannon (1988, in Lantz, 1991) looked at the relationship between physical activity, weight discrepancies and psychological well-being in undergraduate women. Results indicate that women

who participate in regular physical activity have smaller weight discrepancies than their sedentary counterparts and more positive body images.

In research with obese women and exercise, certain themes are found that characterise their experiences and reflect self-presentational concerns. A primary theme was that body size was a major issue for these women and they experienced great social pressure and expectations related to body size. These women perceived great social disapproval of their body size that often generalised to perceived disapproval of the individual as a person (Bain et al, 1989). They also described the dissatisfaction with their body as limiting their value as a person (Bain et al, 1989). Obese women preferred to exercise only with other women, and in settings where they would not be visible or judged by others. Interestingly these women had experienced this social pressure and self-dissatisfaction before becoming overweight. So while obese women have self-presentational concerns related to exercising, these concerns may not necessarily be particular to just obese women.

Research on exercise and SPA with males has not found similar results. Frederick and Morrison (1996) found significant gender differences between high and low scorers on the SPAS, with women more likely to fall in the high scoring group than men. While men do exhibit dissatisfaction with their bodies, the source of dissatisfaction is different from women. Men are more likely to want to be heavier and express greater satisfaction with their body than their face. The reverse is true for women (Silberstein et al, 1998). Men were also found not to exercise largely for weight control, were not likely to weigh themselves as frequently or describe themselves as fat nor diet as regularly as women (Fallon & Rozin, 1985).

1.3 Pregnancy

Generally SPA has been studied with younger and older adult women and it appears that SPA does not necessarily decrease with age. Given the current cultural ethos, the important role that physical appearance plays in self-esteem, and the well-documented and wide spread incidence of body dissatisfaction, it seems intuitively reasonable that physique related anxiety should be salient at any age (Eklund, 1998a). This is probably influenced or exacerbated by an awareness of the cultural aesthetic ideal, thus increasing potential for higher SPA levels in women (Eklund, 1998a). It may be that the motive to appear physically attractive is salient at any age, yet this is combined with greater doubts about ones ability to achieve this as individuals age, thus increasing the potential for higher SPA levels. This may also be a reasonable explanation for pregnant women, a population that has been studied little in relation to SPA.

Pregnancy is a major life transition and is accompanied by social, psychological, behavioural and biological changes (Devine, Bove & Olson, 2000; Marquez-Sterling et al, 2000). There are many negative psychological and emotional manifestations during pregnancy, including mood swings, distorted body image, and perceived loss of control over bodily changes, anxiety and low self-esteem (Lox & Treasure, 2000). For western women, weight gain and loss is also a major part of this transition and pregnancy is a time that poses challenges to perceptions of the body more so than any other body adjustments throughout the female life span.

With the increased awareness of exercise for promoting health and well being, there has been an increased participation by women in physical fitness programmes. The physical deconditioning and potentially negative psychological effects of pregnancy make the pregnant woman an ideal subject for an exercise programme and many women now

wish to continue their exercise activities during pregnancy (Williams, Reilly, Campbell & Sutherst, 1988). While the physiological benefits of exercise for pregnant women are well researched, there is little known concerning the psychological effect of pregnancy on exercise behaviour and patterns (Lox & Treasure, 2000). Body image changes during pregnancy are not well researched. How these changes may influence exercise behaviour during pregnancy is also unknown.

1.3.1 Pregnancy and Exercise

Williams et al (1988) found no compelling evidence for physical inactivity during pregnancy once medical complications were ruled out. There was no systematic decline in exercise capacity during pregnancy and any observed differences could be accounted for by the concurrent changes in resting measures and body weight (Williams et al, 1988). Research has shown that women who exercise during pregnancy actually have leaner, lighter weight babies, tolerate labour better and require less medical intervention than sedentary pregnant women (Marquez-Sterling et al, 2000). Sternfeld, Quesenberry, Eskenazi and Newman (in Goodwin et al, 2000) found that aerobic exercise might be associated with fewer perceived pregnancy symptoms such as insomnia. Exercise has been shown to contribute to increased stamina and reduced physical discomforts and feelings of fatigue in pregnant exercising women (Koniak-Griffin, 1994; Lox & Treasure, 2000; Rankin, 2002). Pregnant exercisers also appear to retain positive perceptions of their physical well-being, particularly their coping ability, during and after pregnancy. A study by Devine et al (2000) found that women's pre-pregnancy weight and exercise patterns and attitudes were maintained during and after pregnancy, whatever their pre-pregnancy orientation was.

Some research has identified psychological benefits of exercise for pregnant women. Goodwin et al (2000) found that exercising pregnant women had a better level of psychological well-being and a reduced frequency of anxiety when compared to pregnant women in a non-exercising group. Research by Koniak-Griffin (1994) found that pregnant women who exercised experience increased self-esteem, confidence and self-image and decreased levels of depression. Cash and Pruzinsky (2002) also found that exercising pregnant women had increased levels of psychological well-being, particularly after pregnancy. The frequency of exercise sessions was not related to psychological well-being and may reflect quality, type and format of exercise programmes.

1.3.2 Pregnancy and Social Physique Anxiety

Pregnancy is a time that is marked by significant changes in body image satisfaction and SPA has not been studied extensively with this population before. Pregnancy may provide a respite from the constant focus on weight, shape and diet. However as the pregnant woman's body becomes increasingly distanced from the cultural ideal it may be expected that they are more negative about their pregnant body and the resulting postpartum body than their pre-pregnant one, as Silberstein et al (1988) found. Yet less body dissatisfaction has been found in pregnant women compared to non-pregnant women, even though their ideal body size remains the same (Davies & Wardle, 1994). This may mean that women make specific adjustments to their body image while pregnant despite possible underlying negative body image schemas (Cash & Pruzinsky, 2002).

Pregnancy may be a time of heightened body awareness and of lowered body satisfaction as ones body moves further from the socially accepted ideal. This change is

unable to be controlled by the pregnant woman. This may mean that pregnancy becomes a time when women are highly body conscious, particularly because they are unable to control their changing bodies. This may result in higher SPA levels for pregnant and postnatal women. Weight concerns are the most frequently expressed concern of women post-partum and body image dissatisfaction has been found to peak at this time (Cash & Pruzinsky, 2002). This has been linked to eating disorders and disturbances which are critical due to the maternal influence on the baby's health.

However other research has shown that body image is usually better in later pregnancy when you can physically see that a woman is pregnant. Research by Davies and Wardle (1994) found that pregnant women were overall more accepting of their size, with lower body dissatisfaction scores. Overestimation of body size also decreased. But compared to non-pregnant samples, this was not associated with high levels of body dissatisfaction, although the ideal body size image remained the same. Yet other research, while supporting these findings, found that satisfaction appeared to be dependent upon pre-pregnancy weight. Grogan (1999) reports that women who were of normal weight prior to pregnancy were more likely to experience negative body image changes. Women who were over weight prior to pregnancy were more likely to experience more positive body image changes. These contradictions may be due to the influence of exercise upon pregnancy.

Both positive and negative findings exist regarding body image and pregnancy. While some women experience few negative physical and psychological symptoms during pregnancy, other women experience many and previous research has highlighted these inconsistencies. Perhaps these anomalies may be explained by the examination of the exercise behaviour of pregnant women.

1.3.3 Pregnancy, Social Physique Anxiety and Exercise

Pregnant women find themselves with a body that is rather distanced from the ideal female figure valued in society. Little is known how body image during this time may influence exercise behaviour. They may be less body competent and more aware of how others may perceive them and hence less inclined to display their physique at all or only in specific situations, such as an exercise class with other pregnant women. This could create a much heightened state of anxiety, lowered self-esteem and a distorted body image, which could result in depression or lowered mood levels.

However the exercising pregnant woman may not experience these problems. The effects of exercising while pregnant may lead to an increased self-esteem and a more positive attitude to the body irrespective of the physical changes happening. This could also be because exercise may reduce a variety of symptoms usually experienced by pregnant women and because intrinsic reasons for exercising, such as health, fun and enjoyment, become more important when pregnant than extrinsic reasons, such as weight, tone and appearance. Also, as this change from the ideal figure is expected and part of pregnancy, body image attitudes may actually become more positive or at least not as much of a focus or concern for the pregnant woman.

Goodwin et al (2000) compared exercising pregnant primagravidas with non-exercising pregnant women and found that the exercising women had more positive body images than the non-exercising women. Exercisers appear to maintain body image levels from early pregnancy to post pregnancy, whereas non-exercisers show a significant decline in body image levels over the same period (Cash & Pruzinsky, 2002). Silberstein et al (1988) found that women who were positive about themselves before pregnancy were happier with their bodies during and after pregnancy. Women who were less positive

about themselves before pregnancy were less happy with their bodies during and after pregnancy.

Research by Marquez-Sterling et al (2000) found that positive psychological changes occurred concurrently with physiological changes for exercising pregnant participants compared to controls. Significant increases occurred in ratings for body satisfaction and sense of well-being for pregnant exercisers along with increased positive ratings for physiological items impacted by exercise, such as physical stamina, muscular strength and energy level.

The postnatal woman, whether exercising or not, may again feel subjected to societal opinion and pressure and consequently experience an increased level of SPA as the postnatal body does not meet the expectations of western society. Motivation to exercise may become more extrinsic again and exercise settings may still be private until perhaps the pre-pregnancy body weight is reached. Exercise participation levels may increase, if time and energy levels permit with a new baby.

1.4 Research Goals

It has long been known that how a person perceives their body corresponds to how they feel about themselves. Research suggests that negative body image is associated with low self-esteem, which is linked to anxiety. Recent research has speculated that this anxiety can be specifically related to a fear of others evaluating a person's physique negatively. This has been referred to as social physique anxiety. Research indicates that women more so than men, are more dissatisfied with their physiques and are more likely to feel anxiety when their bodies are presented in a situation where they may be viewed negatively. Research also shows that attitudes and beliefs of the body and self

influence exercise behaviour (Lantz, 1991). The literature suggests that participation in an exercise programme can improve a person's perception of their body, and consequently alleviate symptoms of depression and anxiety. However, there has been little research investigating the effects that body image has on exercise behaviour, particularly when pregnant.

The recent attention given to people's concerns with how others evaluate their physiques, along with the construction of the SPAS, provides a means of evaluating this phenomenon. It may assist in identifying individuals who may be at risk of negative outcomes. Women suffering from high levels of SPA are less likely to engage in beneficial physical activity than women with low SPA levels. For the pregnant woman this may result in negative outcomes for the woman and the baby.

The purpose of this study was to explore the exercise behaviour and SPA relationship in pregnant women. The following research questions were considered:

- Does the course of pregnancy impact SPA and exercise behaviours and preferences?
- Do exercise patterns change over the course of pregnancy?
- How do reasons for exercise change over the course of pregnancy?

While Hart et al (1989) found SPA to be inversely related to exercise behaviour in other populations, the relationship in pregnant women is uncertain. It was expected that SPA, body image and exercise behaviours, preferences and patterns would change over the course of pregnancy, but the direction of changes could not be predicted. It was expected that there would be a difference between exercising and non-exercising participants on the scales measured.

CHAPTER TWO

Method

2.1 Design

The research design was a repeated measure within and between subjects design of pregnant and post-natal women at three time points: Time 1: during pregnancy; Time 2: 6 weeks post-pregnancy; Time 3: 3 months post-pregnancy. The pre-pregnancy data was collected retrospectively during pregnancy.

2.2 Participants

53 women returned the first questionnaire. At this time 36 women were exercising. Participants ranged in age from 20 to 43 years, with a mean age of 31years (SD = 3.97). Eighty-eight percent of the participants were New Zealand European, two percent were each Maori and Chinese and the remaining eight percent were unspecified. Participants were between 16 and 39 weeks pregnant upon entry to the study, with a mean of 31.85 weeks (SD = 4.54). 50 women completed the second questionnaire and 30 of them were exercisers. 24 women completed all three questionnaires, with 19 participants in the exercising group at this point[1]. Participants were excluded if they were unable to read or write English and no incentives were offered.

[1] Participant numbers dropped off significantly at Time 3. This is because the research was initially intended for an Honours project and originally only included two data collection points. Ethical approval was requested to extend the project and add another data collection point. Approval was given provided participants who had completed the first two questionnaires were not approached again as contact details for these participants had been destroyed as stated in the Information Sheet given to participants upon entry to the study.

2.3 Procedure

Potential participants were verbally informed of the details of the study by the researcher when they attended their community antenatal class. Women interested in taking part were given an information sheet, the first questionnaire and a reply paid envelope. Participants were able to take the pack home to complete and return in the replied paid envelope. The information sheet informed participants that completion of the questionnaire implied consent and the researcher's name and contact details were included if there were any further questions (See Appendix A and B for copies of the information sheet and first questionnaire). Questionnaire completion was anonymous, confidential and voluntary and undertaken at a time and place convenient to the participant. Upon receiving the first completed questionnaire in the mail the participant details and dates were recorded so that the second and third questionnaires could be posted out at 6 weeks and 3 months respectively following the birth of their baby.

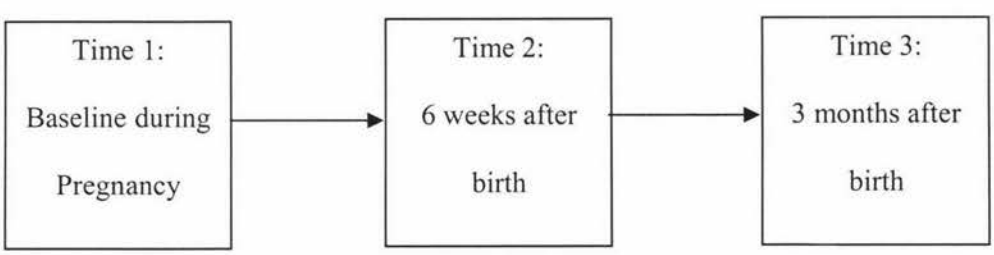

Figure 1. Research Design Model

Approximately 6 weeks following the anticipated birth date of each participant, the researcher contacted the antenatal or exercise class leader to enquire about the participant's birth. In some cases the class leader contacted the researcher with this information. If the participant had returned home with a healthy baby (as was the case for all participants), the researcher then posted out the second questionnaire pack for the participant to complete at home and return in the envelope provided. The second

questionnaire pack contained the same questionnaire as the first pack, and included a covering letter that restated their rights and invited them to complete the second questionnaire. The second pack also included some additional questions regarding the birth experience and the general health of their baby. At approximately three months following the birth the third questionnaire was posted to participants along with a covering letter and reply paid envelope. This questionnaire was the same as questionnaire two (See Appendix C and D for copies of the letters and questionnaires).

2.4 Ethics

The Auckland Y Ethics Committee and the Human Ethics Committee of Massey University, Albany campus, approved the study.

2.5 Measures

Instruments were administered at 3 intervals during the study (See Figure 1). Participants completed questions that provided demographic information and data regarding their current physical activity levels along with a series of inventories including the Social Physique Anxiety Scale (SPAS), the Reasons for Exercise Inventory (REI), Exercise Behaviours and Preferences Scale and a modified Body Esteem Scale.

2.5.1 Demographic and Exercise Data

Demographic information was collected about each participant including age, height, current and pre-pregnancy weight, ethnicity, expected delivery date and number of weeks pregnant. Participants also provided general information regarding their health and well being. Information was collected regarding the type and frequency of exercise participants were engaged in. Participants reported what physical activities they

engaged in, how many sessions per week they engaged in these activities and the time typically spent exercising each session.

2.5.2 The Social Physique Anxiety Scale (SPAS)

The SPAS is designed to measure levels of social physique anxiety (Hart et al, 1989). The SPAS is a 12-item self-report inventory. Respondents are asked to indicate the degree to which each of the twelve statements is characteristic or true of them. Responses are on a 5 point Likert scale anchored by (1) not at all and (5) extremely. Scores range in value from 12-60 with higher scores indicating higher levels of social physique anxiety. Items 1, 2, 5, 8, and 11 are reverse scored. The SPAS has demonstrated construct validity (Hart et al, 1989; McAuley & Burman, 1993) through moderate correlations with measures that included fear of negative evaluation ($r = .35$) and body cathexis ($r = -.51$). The SPAS was also correlated with the three subscales of the Body Esteem Scale: sexual attractiveness (female $r = -.26$), weight concern (female $r = -.45$) and physical condition (female $r = -.53$). Test-retest reliability of .82 was demonstrated after 8 weeks. Inter-item reliability is reported to be .9. The SPAS is also reported to be free from social desirability bias ($r = -.07$) with the Social Desirability Scale. Predictive (criterion) validity was demonstrated by findings that women with high levels of social physique anxiety were more stressed during a physical fitness examination and reported more negative thoughts about their body during the examination than women low with low SPA levels (McAuley & Burman, 1993).

For the following analysis the nine-item version of the SPAS was used, deleting items 1, 2 and 5 (Martin, Rejeski, Leary, McAuley & Bane, 1997). Recent commentary suggests that this change results in a version that is more closely related to the concept of social physique anxiety and is more clearly unidimensional (Martin et al, 1997). The

shorter version of the SPAS does not compromise the reliability or validity of the measure, and yields a parsimonious nine-item single factor model (Martin et al, 1997).

2.5.3 Reasons for Exercise Inventory (REI)

The REI is a 24-item self-report inventory with seven subscales purporting to address the motives for engaging in exercise activities (Silberstein et al, 1988). The subscales include exercising for weight control, for fitness, for health, to improve body tone, to improve overall physical attractiveness, for mood enhancement and for enjoyment. The subscales are reported to have adequate internal consistency, although the enjoyment subscale of .65 falls below the desirable minimum alpha coefficient of .70.

2.5.4 Exercise Behaviours and Preferences Scale

This is a twelve item self-report inventory and has been developed to examine self-presentation issues in exercise settings such as personal appearance, social evaluation, and sociability and exercise atmospheres (Eklund & Crawford, 1994). The 5 point Likert scale response format includes appropriate-for-question anchors such as prefer not to, not at all, very negatively, very unimportant for values of 1 and prefer to, all the time, very positively and very important for values of 5. These questions do not constitute a scale per se, and so analyses were conducted on individual items.

2.5.5 Modified Body Esteem Scale

A modified version of Franzoi and Herzog's (Franzoi & Shield, 1984) Body Esteem Scale was used containing 11 aspects of physical appearance. The scale was used to measure level of body satisfaction and attitude to body image. Subjects rated their satisfaction with each bodily aspect on a 5-point scale, ranging from (1) dissatisfied to (5) satisfied. An overall body esteem score was calculated by summing across all items,

with higher scores (35-55) indicating more body image satisfaction and lower scores indicating a negative attitude (below 25). Scores range in value from 11 to 55. Franzoi and Shields (1984) research indicates that the Body Esteem Scale is a multidimensional construct with gender influencing the factor structure, resulting in three distinct, interrelated factors that differ for men and women. Body Esteem for women is comprised of three primary components. The first relates to sexual attractiveness, the second involves weight concern and the third factor pertains to physical conditioning.

2.6 Analysis

Means and Standard Deviations were calculated for each group on all measures and a range of demographic data for each of the three data collection times. Pearson correlation coefficients were calculated for the data. A repeated measures analysis of variance and paired samples t-test were used for analysis of parametric data. Only within group differences for the exercisers were calculated, as the sample size was not great enough to carry out calculations for the non-exercising group.

The repeated measure ANOVA was used to predict relationships over time for each of the measures and the relevant subscales. The assumptions of homogeneity of variance (F max) and sphericity (Greenhouse-Geisser Epsilon) were tested. Significant changes were then further analysed using paired t-tests. Statistical significance was set at the 95% confidence level ($p < .05$)[2]. Analysis was performed using SPSS version 12.

[2] Factor analysis was not carried out on the extant measures due to the small sample size (n = 53). Given the information above it was also felt that the quality of the measures used was more than adequate for the purposes of the study.

CHAPTER THREE

Results

3.1 Descriptive Analysis

The mean age of the 53 participants was 31.1 years (SD = 4.0) and the average height was 164 cm. Most participants (69%) were working full time upon entry to the study, ten were not working at all and six participants were working part time. The mean number of weeks pregnant upon entering the study was 31 and for 88% of participants this was their first child. 68% of the participants were exercising when the study began. The majority of participants in the exercise group were walking (67%). 32% were doing yoga (or a stretch/relaxation type class). Other chosen activities included swimming, cycling, weights or aerobics. During the study 53% maintained a level of exercise while 13% stopped and 7% started exercising. Some participants did a combination of stopping and/or starting throughout the study (5%). Descriptive statistics for each group are presented in Table 1.

Table 1. Mean (SD) Demographic Characteristics of Sample by Exercise Status

	Exercising	Non-exercising
Age (years)	31.13 (3.5), n=36	31.18 (5.0), n=16
Height (m)	164.67 (7.4), n=28	162.27 (7.6), n=11
Pre-pregnancy weight (kg)	64.33 (9.5), n=36	60.78 (18.4), n=16
Weight during pregnancy (kg)	70.38 (17.6), n=36	74.29 (11.8), n=16
Weight 3 months post-pregnancy (kg)	66.76 (9.8), n=17	68.57 (15.0), n=5
No. of children	1.89 (.3), n=36	1.87 (.4), n=15
No. of weeks pregnant at entry to study	31.11 (4.8), n=36	33.31 (3.6), n=16

3.1.1 Exercising Participants

The mean age and height for exercisers was 31.1 years (SD = 3.5) and 164 cm (SD = 7.4). For 88% of exercisers this was their first child (Table 1). More exercisers were working fulltime (75%) or part-time (13%) upon entry to the study than non-exercising participants. Exercisers had a pre-pregnancy mean weight of 64 kg (SD = 9.5), 70 kg (SD = 17.6) during pregnancy and a post-pregnancy mean weight of 66 kg (SD = 9.8) at 3 months. The exercising group had a weight discrepancy at Time 1 of 8.29 kg (SD = 12.6). This had fallen to only 1.04 kg (SD = 7.2) by Time 2 and risen slightly to 1.64 kg (SD = 4.8) at Time 3 (Table 2).

Table 2. Mean (SD) Weight (Kg) Discrepancy Scores for Exercisers over Time

Time 1 n=36	Time 2 n=22	Time 3 n=17
8.29 (12.6)	1.04 (7.2)	1.64 (4.8)

Table 3 shows that upon entry to the study 67% of exercising participants were walking three times per week. This was for an average of 30 minutes each session (Table 4). Other aerobic activities being undertaken included running, swimming, aerobic classes, cardio exercise at a gym and/or cycling. A large number (32%) were also participating in a yoga or stretch/relaxation type class. This exercise was undertaken once a week for an average of 90 minutes per session (Table 4) and has been classified as non-aerobic for this study. The other non-aerobic activity participants were doing was working with weights.

At Time 2 aerobic activity was still the most popular form of exercise being undertaken by participants (62%) as shown in Table 3. All forms of non-aerobic activity had almost ceased, with only one exerciser participating in yoga and two using weights. Walking

was still the most popular aerobic activity with 30 participants walking. The average number of sessions completed during a week remained the same, however the mean duration of these sessions increased to 60 minutes as Table 4 shows. Running, cycling and swimming were the other aerobic activities recorded by participants at this time (Table 3).

Table 3. Frequency of Exercise Activity over Time

	Time 1 n=36	Time 2 n=30	Time 3 n=18
Walking	35	30	18
Running	2	2	2
Swimming	2	3	0
Aerobics	2	0	2
Weights	1	2	2
Cardio	2	0	1
Yoga	17	1	0
Cycling	2	1	1
Team sport	0	1	1
Other	1	1	0

Table 4. Mean Activity Sessions and Minutes per Week for Walking and Yoga over Time

	Time 1 n=36		Time 2 n=30		Time 3 n=18	
	Sessions per week	Minutes per session	Sessions per week	Minutes per session	Sessions per week	Minutes per session
Walking	3	30	3	60	3	60
Yoga	1	90	1	90	na	na

Aerobic activity was the main activity exercisers were performing at Time 3, with walking still the most popular activity (75%). Walking was on average still being undertaken for 60 minutes, three times per week as at Time 2 (Table 4). Other aerobic activities being performed included running, cycling, aerobics and cardio exercises at a gym. Two participants were using weights at this time and no-one was doing yoga.

The mean SPA score for exercisers at Time 1 was 24.89 (SD =. 5.3), at Time 2, 24.84 (SD = 5.5) and at Time 3, 25.71 (SD = 7.6). The Body Esteem total scores for exercisers reflects a similar pattern to the SPA scores, with a slight drop at Time 2 followed by an increase in scores at Time 3 (Table 5).

Table 5. Mean (SD) Total Scores for Psychological Variables: Exercisers and Non-Exercisers over Time

	Time 1		Time 2		Time 3	
	Exercisers	Non-exercisers	Exercisers	Non-exercisers	Exercisers	Non-exercisers
	n=36	n=16	n=30	n=19	n=18	n=5
Total SPAS	24.89 (5.3)	24.87 (7.5)	24.84 (5.5)	26.84 (6.6)	25.71 (7.6)	29.90 (5.6)
Total Body Esteem	34.11 (7.3)	36.56 (8.4)	32.97 (8.3)	50.11 (31.1)	38.53 (18.9)	28.80 (7.3)

Note. SPAS= Social Physique Anxiety Scale.

Exercising participants became more dissatisfied with their stomachs, hips, legs, weight, buttocks and waists over time (Table 6). However mean scores for chest, face, arms and tone increased over time, indicating greater satisfaction with these areas.

The total REI intrinsic mean scores increased at Time 2 then decreased at Time 3. Total mean extrinsic scores continued to increase throughout the study with the weight and tone subscales showing the greatest rises of 8.30 and 5.92 respectively (Table 7). The

enjoyment subscale was the only scale that decreased in mean total from Time 1 to Time 3 (Table 7).

Table 6. Mean (SD) Scores for Individual Body Esteem Items for Exercisers over Time

	Time 1 n=36	Time 2 n=30	Time 3 n=18
Chest	3.61 (.90)	3.53 (1.2)	3.82 (1.2)
Stomach	3.41 (1.1)	2.0 (1.1)	2.88 (1.0)
Hips	2.60 (1.1)	2.73 (1.1)	2.33 (1.1)
Legs	2.63 (1.1)	2.96 (1.2)	2.52 (1.2)
Tone	2.52 (.90)	2.56 (1.1)	3.17 (.95)
Weight	3.02 (1.1)	2.76 (1.3)	2.35 (.99)
Face	3.77 (.97)	3.93 (1.0)	4.18 (.98)
Arms	3.11 (1.2)	3.20 (1.3)	3.52 (1.0)
Buttocks	2.50 (1.2)	2.56 (1.2)	2.11 (1.0)
Waist	2.91 (1.1)	2.50 (1.2)	2.50 (1.1)

Table 7. Mean (SD) REI Scores for Exercisers over Time

	Time 1 n=34	Time 2 n=30	Time 3 n=18
Weight (E)	6.64 (4.6)	12.70 (4.7)	14.94 (3.9)
Fitness (E)	16.20 (5.9)	18.50 (5.3)	18.55 (5.1)
Mood (I)	12.97 (4.9)	14.43 (4.3)	13.47 (3.7)
Health (I)	19.11 (4.8)	19.83 (5.7)	19.73 (5.0)
Appearance (E)	2.76 (1.8)	5.00 (1.9)	5.80 (.90)
Enjoyment (I)	10.02 (5.1)	11.10 (4.2)	8.70 (2.9)
Tone (E)	6.50 (3.7)	12.76 (5.2)	12.42 (4.0)
Total Intrinsic score	39.33 (12.7)	44.90 (12.5)	41.94 (10.0)
Total Extrinsic score	29.38 (14.1)	47.80 (14.9)	49.73 (14.7)

Note. E= extrinsic; I= intrinsic.

Results in Table 8 show mean scores for selected items relevant to SPA from the Exercise Behaviour and Preferences scale. Exercising participant scores increased over time with regard to their preference for wearing tight clothing while exercising. A corresponding decrease was exhibited in preferences for wearing loose clothing. Participants became more concerned post-pregnancy about their appearance being judged by others and they were also thinking more about their own appearance when exercising at this time. Socialising while exercising exhibited a small increase at the 6 week time point, but had returned to a level similar to pre-pregnancy levels by 3 months post-pregnancy.

Table 8. Mean (SD) Scores for Selected Exercise Behaviour and Preferences Items for Exercisers over Time

	Time 1 n=37	Time 2 n=31	Time 3 n=16
Prefer to exercise in tight clothing	1.70 (.93)	2.32 (.97)	3.25 (2.0)
Prefer to exercise in loose clothing	4.16 (.86)	3.45 (1.2)	2.26 (1.0)
Think appearance is being judged by others while exercising	2.18 (1.2)	2.32 (1.2)	3.63 (.89)
Thinking about appearance while exercising	2.40 (1.1)	2.48 (1.4)	3.17 (.72)
Extent socialising is important when exercising	2.37 (1.1)	2.54 (1.3)	2.33 (.72)

3.1.2 Non-exercising Participants

The non-exercising participants mean age was the same as the exercising participants. 37% of non-exercisers were not working upon entry to the study and 56% were working full-time. For 13% of this group it was not their first child (Table 1). The mean height

was slightly lower at 162 cm (SD = 7.6). Non-exercisers had a pre-pregnancy mean weight of 60 kg (SD = 18.4), 74 kg (SD = 11.8) during pregnancy and a post-pregnancy mean weight of 68 kg (SD = 15.0) at 3 months. The non-exercisers weight discrepancies over time continued to fall gradually from 8.45 kg (SD = 4.6) at Time 1, to 4.35 kg (SD = 7.4) at Time 2 and 1.85 kg (SD = 9.6) by Time 3 (Table 9).

Table 9. Mean (SD) Weight (Kg) Discrepancy Scores for Non-Exercisers over Time

Time 1 n=16	Time 2 n=10	Time 3 n=5
8.45 (4.6)	4.35 (7.4)	1.85 (9.6)

Mean total scores for the SPAS for non-exercisers continued to increase from Time 1 through to Time 3 (Table 5). The total Body Esteem scores however showed a large increase at Time 2 followed by a drop at Time 3 to a level below that of Time 1. Non-exercising participants were less satisfied over time with their stomach, hips, legs, tone, weight, buttocks and waist. Increased satisfaction was found for their chest, face and arms (Table 10).

Non-exercising participants did not answer the REI and Exercise Behaviour and Preferences scales as they were not exercising and therefore could not complete these questionnaires.

Table 10. Mean (SD) Scores for Individual Body Esteem Items for Non-Exercisers over Time

	Time 1 n=16	Time 2 n=14	Time 3 n=5
Chest	3.56 (1.2)	3.50 (1.2)	3.80 (1.30
Stomach	3.81 (.80)	2.07 (1.0)	3.40 (1.1)
Hips	2.81 (1.2)	2.57 (1.2)	2.20 (1.3)
Legs	2.62 (1.1)	2.64 (1.3)	2.00 (1.0)
Tone	2.56 (1.2)	2.50 (1.2)	1.80 (.44)
Weight	3.68 (.94)	2.78 (.97)	2.20 (.44)
Face	3.68 (.94)	3.92 (1.1)	3.80 (1.3)
Arms	3.37 (1.1)	3.26 (1.2)	3.88 (.92)
Buttocks	2.50 (1.2)	2.55 (1.2)	1.60 (.54)
Waist	3.56 (1.9)	2.64 (.92)	1.60 (.54)

The changes in mean scores over time for SPA and Body Esteem for both groups are depicted in Figure 2. The changes in scores for both groups, while not significant, indicated that non-exercising participants generally scored higher in SPA than exercisers, and on the whole exhibited greater body dissatisfaction than their exercising counterparts.

The changes in SPA and Body Esteem scores for exercisers were mirrored in the changes over time for extrinsic and intrinsic reasons for exercise (Figure 3). As these scores gradually increased over time, there was a corresponding change in the pattern of intrinsic and extrinsic responses. Extrinsic reasons for exercise increased comparative to the SPA and Body Esteem scores, and this was paralleled by a decrease in intrinsic responses.

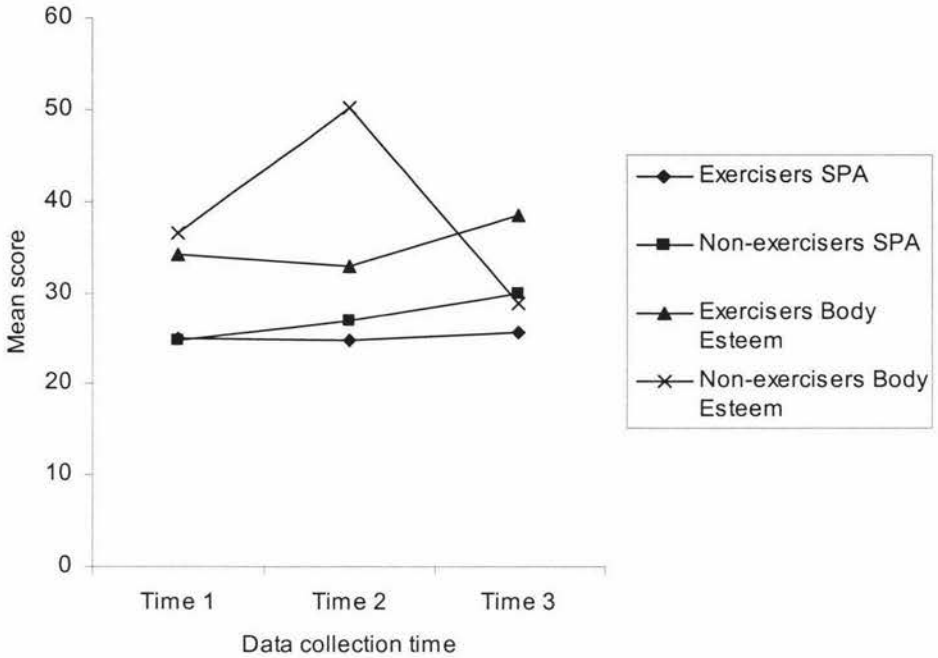

Figure 2. Mean SPA and Body Esteem scores for exercisers and non-exercisers at each data collection time

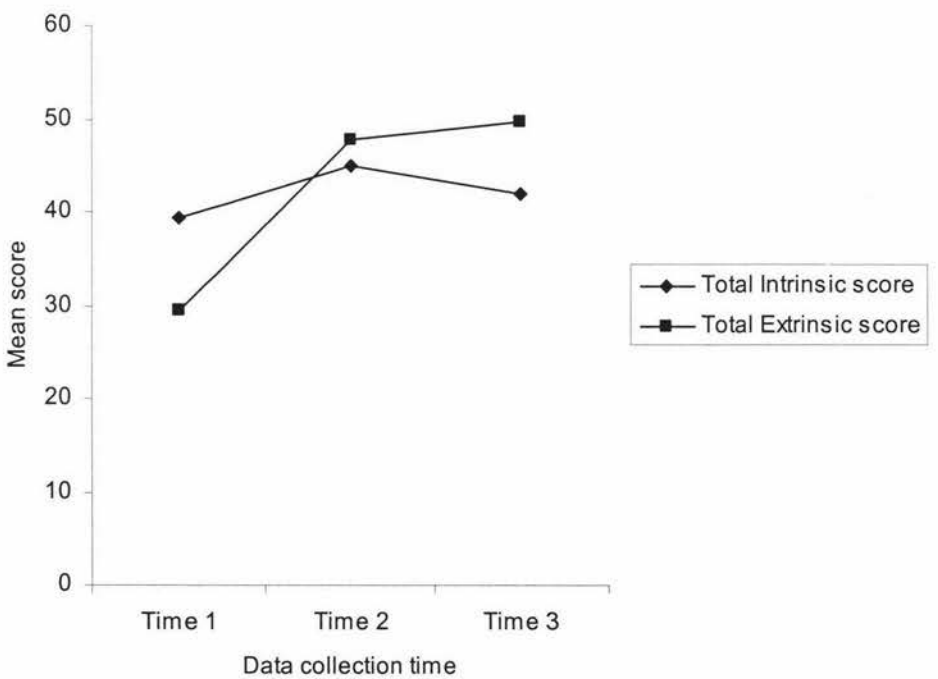

Figure 3. Mean Total REI intrinsic and extrinsic scores for exercisers at each data collection time

Changes were also occurring in scores for items on the Exercise Behaviour and Preferences scale, particularly items reflecting self-presentational concerns (Figure 4). However while some reflected the changes occurring in SPA and REI scores, others appeared contradictory. As SPA and extrinsic reasons for exercise increased, the expected and associated increases in thinking about appearance and feeling one is being judged while exercising were evident. Yet the expected associated preference for wearing loose clothing was not found. Rather there was an increase in the preference for wearing tight clothing.

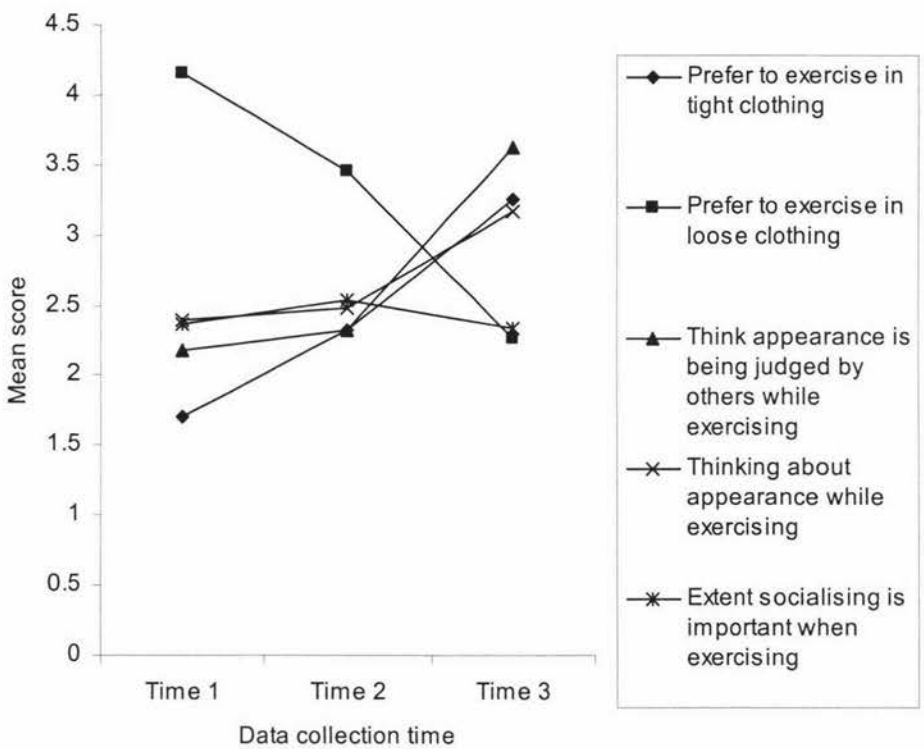

Figure 4. Mean exercise behaviour and preference scale scores for selected items for exercisers

Again supporting and contradictory evidence for the changes in SPA and REI scores was found when the frequency and duration of activity sessions was examined (See Figure 5 & 6, Appendix E). As scores increased so did the duration of activity sessions (see Figure 6, Appendix E) but not the frequency (see Figure 5, Appendix E). The type

of exercise (aerobic or non-aerobic) also altered, matching the changes in reasons for exercising (see Figure 5, Appendix E).

3.2 Inferential Analysis

Correlational tests were used to determine if SPA was significantly related to the other variables measured at each data collection time point. Repeated-measures ANOVA were also conducted on the data and used to examine differences within groups over time on the total and subscales scores for each of the variables measured.

Correlation analysis showed that SPA and extrinsic reasons for exercise were significantly, moderately and positively related at all data collection time points (Table 11). Thus as SPA increases so to does extrinsic reasons for exercise. The associated probability level of 0.05 showed that such results are unlikely to have arisen by sampling error. The relationship between SPA and intrinsic reasons for exercise was found to be positively and strongly related ($r = +.72$, $p < 0.01$) at Time 2 only (Table 11).

Table 11. Correlation Coefficients for SPA and REI over time for Exercisers

	Time 1	Time 2	Time 3
Intrinsic	0.03	0.72**, n = 14	0.49
Extrinsic	0.42*, n = 35	0.45*, n = 25	0.57*, n = 13
Total	0.24	0.39	0.44

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

SPA and many individual Body Esteem scores were significantly correlated for exercisers at Times 1 and 2 but not at Time 3. While the relationships were weak to

moderate, they were still statistically significant. The total Body Esteem score for exercisers was moderate and negative ($r = -.56$, $p < 0.01$) at Time 1 only. Therefore as SPA increased, levels of body satisfaction decreased. Non-exercisers individual and total Body Esteem scores were not largely significantly correlated at any time point. As Table 12 shows, both groups had significant weak to moderate correlations at Time 1 for stomach, legs, and weight and total scores.

Table 12. Correlation Coefficients for SPA and Individual Body Esteem Items for Exercisers and Non-Exercisers over Time

	Time 1		Time 2		Time 3	
	Exercisers n=36	Non-exercisers n=16	Exercisers n=32	Non-exercisers n=12	Exercisers n=16	Non-exercisers n=5
Chest	- 0.20	- 0.35	- 0.17	0.50	- 0.59*	- 0.06
Stomach	- 0.38*	- 0.70**	- 0.38*	- 0.05	0.38	- 0.82*
Hips	- 0.30	- 0.69**	- 0.41*	- 0.23	- 0.44	- 0.51
Legs	- 0.53**	- 0.55*	- 0.32	- 0.71**	- 0.39	- 0.77
Tone	- 0.35*	- 0.48	- 0.35	0.12	- 0.45	- 0.15
Weight	- 0.57**	- 0.63**	- 0.42*	- 0.19	- 0.20	- 0.44
Face	- 0.37*	_	- 0.50**	- 0.01	0.13	0.88*
Arms	- 0.38	- 0.17	- 0.34	- 0.18	0.13	- 0.07
Buttocks	- 0.31	- 0.63**	- 0.44*	- 0.20	- 0.37	- 0.39
Waist	- 0.32	- 0.32	- 0.48	- 0.23	- 0.47	- 0.10
Total	- 0.56**	- 0.62*	0.51**	- 0.18	- 0.29	- 0.64

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Some significant correlations between SPA and selected Exercise Behaviour and Preferences scale items were found for exercisers over time. Significant moderate and positive relations were found at Times 1 and 2 between SPA and thinking appearance is being judged by others when exercising ($r = + .46$, $p < 0.01$; $r = + .46$, $p < 0.05$) and

thinking about appearance while exercising (r = + .57, p < 0.01; r = + .40, p < 0.05) as shown in Table 13.

Table 13. Correlation Coefficients for SPA and Selected Exercise Behaviour and Preferences Items for Exercisers over Time

	Time 1	Time 2	Time 3
Prefer to exercise in tight clothing	0.21	- 0.25	0.45
Prefer to exercise in loose clothing	- 0.12	0.15	- 0.41
Think appearance is being judged by others while exercising	0.46**, n = 36	0.46*, n = 25	0.45
Thinking about appearance while exercising	0.57**, n = 34	0.40*, n = 25	0.09
Extent socialising is important when exercising	0.23	- 0.21	- 0.45

Repeated-measures ANOVA results showed that differences over time for the extrinsic reasons for exercise and the weight, tone and appearance subscale totals for the exercisers were significant and unlikely to have arisen by sampling error (Table 14). A moderate effect was found for the item regarding how much participants think their appearance is being judged while exercising on the Exercise Behaviour and Preferences scale (F = 7.08, p = .011). 42% of the variance in the score on this item could be accounted for by changes over time, i.e. from during pregnancy to post-pregnancy. There was no significant effect of time for any of the other variables for the exercising group. Consistent with other research no significant effect was found for duration and frequency of exercise and SPA (Crawford & Eklund, 1994). Analyses failed to yield a significant effect overall for the non-exercising group on any of the variables examined or on the pattern of change over time for this group.

Table 14. Repeated-Measures ANOVA Results for REI Extrinsic, Weight, Appearance and Tone Subscales

	F	df	P	Eta Squared
Extrinsic total	14.55	1.86	<.001	.59
REI Weight	20.06	1.81	<.001	.72
REI Appearance	27.26	1.76	<.001	.77
REI Tone	18.83	1.72	<.001	.68

The significant changes over time identified by the repeated-measures ANOVA were explored further by analysing the exercising group using paired t tests. Pairwise comparisons were carried out between time points for the following variables from the REI subscales: tone, weight, appearance and the extrinsic total score. For changes between Time 1 and 2 for extrinsic reasons for exercising, the mean difference was 16.00 with $t(23) = 5.11$, $p < .001$. The confidence interval showed that the population mean difference was likely (95%) to be found between 22.47 and 9.52.

Participants also showed significant increases from Time 1 to Time 3 ($t = 5.60$, $p < .001$) for extrinsic reasons for exercising, but not from Time 2 to Time 3 ($t = .09$, $p = .93$). The mean difference between Time 1 and Time 3 was 20.00, with the confidence interval for the population mean difference between 27.72 and 12.28. Other significant increases were found for changes between Time 1 and Time 2 for tone ($t = 5.11$, $p < .001$), weight ($t = 5.05$, $p < .001$) and appearance ($t = 4.41$, $p < .001$). Mean differences were 5.87, 5.44 and 1.70 respectively. The confidence interval showed that the population mean differences were likely (95%) to be found between 3.49 and 8.25, 3.20 and 7.67 and .90 and 2.49 for tone, weight and appearance. Statistically significant differences were also found between Time 1 and Time 3 for the same subscales: tone ($t = 6.24$, $p < .001$), weight ($t = 6.54$, $P < .001$), appearance ($t = 7.75$, $p < .001$). Mean

differences were 6.85, 9.08 and 3.08 and population mean differences were likely (95%) to be between 4.46 and 9.24, 6.02 and 12.14 and 2.20 and 3.96 respectively.

Statistically significant changes were found for the exercising group. Significant changes occurred between Time 1 and any time post-pregnancy for tone, weight, appearance and extrinsic reasons for exercise. Repeated-measures ANOVA indicated that 68 % of the variance in tone scores was accounted for by changes over time. 70 % and 77 % of the variances in weight and appearance scores were accounted for by changes over time and 60 % of the variance in extrinsic scores was accounted for by changes over time. Significant changes did not occur between post-pregnancy data collection points for these or any other variables. No significant changes were found for the non-exercising group on any of the variables measured.

CHAPTER FOUR

Discussion

The purpose of this study was to extend investigations of associations among SPA and exercise behaviour by conducting the examination with a pregnant population. This association was supplemented with information on body image, reasons for exercise and exercise behaviours and preferences in order to consider if the course of pregnancy impacts SPA and exercise behaviours and preferences and whether exercise patterns and reasons for exercise change over the course of pregnancy. Interesting consistencies and contrasts with previous research emerged, raising questions that require further investigation.

Findings for the exercising sample show continual gradual increases in SPA scores over time along with an overall increase in Body Esteem scores, although these do drop at Time 2 but rise again at Time 3 to levels higher than the initial scores at Time 1. The changes were not statistically significant. The drop in Body Esteem scores at Time 2, evidence of greater body satisfaction, probably reflects the considerable drop in weight discrepancy from Time 1. The increase in weight discrepancy by Time 3 is most likely reflected by the increased Body Esteem and SPA scores for this group at this time. Such findings appear to be consistent with Lantz (1991) and Silberstein et al (1988) and their evidence that for women body esteem is partly comprised of weight concern and control. As SPA also represents concerns regarding body proportions, structure and tone (Leary, 1992), it seems reasonable that the SPA scores also parallel these changes in weight discrepancy.

The weight discrepancy, Body Esteem and SPA scores for the exercising sample vary together with the changing emphasis in the reasons for exercising for this group.

Extrinsic reasons, such as weight, tone and appearance, become more important over time, particularly post-pregnancy, compared to intrinsic reasons. The higher intrinsic scores, reflecting health, enjoyment and fun reasons for exercise, during pregnancy and early post-pregnancy support other evidence that pregnant exercisers have better levels of psychological well-being, including increased levels of self-esteem and self-image that are maintained to some degree post-pregnancy (Cash and Pruzinsky, 2002; Goodwin et al, 2000; Koniak-Griffin, 1994). However the rise in intrinsic reason scores at Time 2 followed by a drop at Time 3 could be reflective of the diminished weight discrepancy at Time 2 and the subsequent increase in this score at Time 3. At Time 2 participants are probably feeling they are successfully moving towards regaining their pre-pregnancy weight as indicated by the weight discrepancy score at this time. So participants may feel they can continue exercising for enjoyment, mood and health reasons. Yet by Time 3 when the weight has not returned to pre-pregnancy levels, and for some participants may have actually increased since Time 2, the focus of exercise may change for this group towards more extrinsic reasons, such as weight, appearance and tone.

The rising extrinsic scores following pregnancy are likely to be attributed to self-presentational motives for exercising and are usually typically characterised by direct or indirect pressure from others, arising from socio-cultural or interpersonal pressures to conform to an ideal standard weight (Kowalski, Crocker & Kowalski, 2001). It would be expected therefore that reasons for exercising post-pregnancy may be reflective of self-presentational motives as women again try to meet socio-cultural pressures regarding weight. Such evidence is supportive of findings by Frederick and Morrison (1996) and Crawford and Eklund (1994) about the reasons people have for exercising. The findings in this study also support research by Strang and Sullivan (1988) that the

resulting post-partum body is more negatively evaluated than the pre-pregnant body, as indicated by the rising SPAS and Body Esteem scores, due to the increasing distance the body has become from the cultural ideal. The finding of statistically significant changes over time for tone, weight, appearance and extrinsic reasons for exercise are clearly indicative of self-presentational motives for exercise and along with the rising SPA levels of the exercising group, it would appear that this supports previous research suggestions that the reasons women engage in exercise are differentially associated with SPA (Crawford & Eklund, 1994).

Further support for the importance of self-presentational reasons for exercise is seen in the findings presented in Figure 4. Although the changes were not statistically significant, over time exercisers showed a greater awareness of their own appearance while exercising and their feeling of being judged by others increased and significant correlations were found between SPA and these two items at Times 1 and 2 (Table 13). Exercisers also reported experiencing less interest in socialising when exercising. These findings are supported by other literature which has also found moderate associations between SPA and the Exercise Behaviours and Preferences questions that focus on appearance and concerns about being judged (Eklund & Crawford, 1994).

This evidence of support for a connection between self-presentational and extrinsic motives for exercise and SPA is further supported by the individual Body Esteem scale item scores for this sample. While participants expressed greater satisfaction over time with their chest, face, tone and arms, they expressed less satisfaction (and therefore greater satisfaction) with most other areas, particularly their weight. This dissatisfaction with weight is usually found alongside extrinsic reasons for exercise (Crawford & Eklund, 1994) and is also usually associated with increased levels of SPA. However the

somewhat contradictory high levels of body satisfaction expressed by the exercisers have also been found in other pregnant samples (Cash & Pruzinsky, 2002) and may be indicative of special adjustments pregnant women make to their body image when pregnant despite possible underlying pre-existing negative body image schemas.

Further contradictions are evident too in the Exercise Behaviour and Preferences scale responses. Over time exercisers express a greater preference for exercising in tight clothing and at the same time they also express greater satisfaction with their body. Yet SPA levels increased over time. Past research (Eklund, 1998a) has found patterns of association between high levels of SPA and less favourable attitudes towards settings emphasising the physique. Significant but moderate correlations, in the expected directions, have also been found between SPA and preferences for loose or tight fitting exercise clothing (Eklund & Crawford, 1994). However for pregnant women this contradiction may be explained by the relative decrease in body size post-pregnancy compared to during pregnancy, resulting in greater preferences for tighter clothing following months of maternity wear, while still having an awareness that the post-pregnancy body is not as it was before pregnancy.

The exercise patterns and behaviours of the exercising group also change over time in a manner that may be explained by the shifting pattern of scores on the SPAS, Body Esteem scale, REI and Exercise Behaviour and Preferences scale. During pregnancy this group participate in a range of both aerobic and non-aerobic activities. Almost every exerciser is walking during pregnancy and a large proportion also participates in yoga type classes. Post-pregnancy walking is still popular but many other activities, particularly non-aerobic ones, have decreased or ceased entirely.

At Time 1 exercisers were walking on average three times per week and usually for 30 minutes per session. This pattern changes post-pregnancy, but is consistent at Times 2 and 3. While the frequency of sessions stays the same, the duration increases greatly to 60 minutes per session. This increase is echoed in a rise in extrinsic reasons for exercising along with rises in weight, tone and appearance reasons for exercising. Rises are also seen in exercisers awareness of being judged while exercising. Increasing aerobic activity is an acknowledged method of weight management. Walking would also be a more conducive activity for a new mother who may need to undertake exercise that included the new baby. However this increase in aerobic activity duration is not matched by an increase in SPA until Time 3 and is contradicted by the greater weight satisfaction scores expressed by this group over time. Such contradictions are again perhaps indicative of an increased satisfaction with the post-pregnancy body when it is compared to the pregnant body, balanced by awareness however that the body is not the same as it was pre-pregnancy.

This anomaly may further be explained by the fact that the walking may not be being undertaken in a social context and therefore self-presentational strategies would not be having an impact on this exercise behaviour. The contradiction evident between the increased weight satisfaction and increasing SPA scores may be the result of the comparative decrease in body weight over time (during pregnancy to post-pregnancy) contrasted by the fact that the body however is not the same as pre-pregnancy. The small rise in the number of aerobic activities being engaged in at Time 3, particularly those occurring in social settings, may also be explained by the increased weight discrepancy from Time 2. The increase in exercises occurring in social settings at this time may explain the rising SPA scores. The continued decrease in participation in non-aerobic activity is supported by the findings of the REI responses, particularly the

decrease in intrinsic and related subscale scores and corresponding increase in extrinsic scores. The rising SPA scores may also explain the cessation of most non-aerobic activity at Time 3 as yoga is an exercise that occurs in a social setting. However with the greater satisfaction that the exercising group expresses for individual items of the Body Esteem scale, it is perhaps surprising that non-aerobic activity has ceased post-pregnancy.

The pattern of weight discrepancy changes for the exercisers is furthermore reflected in the changing exercise patterns and behaviours. Although the weight discrepancy experienced post-pregnancy at Time 2 is small, a discrepancy still exists. Therefore exercise levels are increased, presumably with the intention to eliminate the discrepancy, as the increased extrinsic REI and weight subscale scores may suggest. Yet the slightly larger discrepancy experienced at Time 3 is not matched by a corresponding increase in exercise frequency or duration at this time, even though SPA levels increase at this time. This finding is supportive of other research which has not found an association between exercise frequency and duration and SPA levels (Crawford & Eklund, 1994). Physique-related perceptions may also be stimulating protective self-presentational behaviours and deterring individuals from being active in social settings when they have concerns about being evaluated negatively while exercising, as indicated by the rise in scores regarding being judged while exercising and concern regarding appearance.

Overall, consideration of the significant changes for extrinsic, tone, weight and appearance scores for exercisers on the REI provides further support for the SPA concept. In addition, the significant correlations found between SPA and extrinsic scores over time and other selected Body Esteem and Exercise Behaviour and

Preferences scale items, also adds support to the SPA concept. SPA has consistently been found to be positively associated with emphasis upon self-presentational reasons for exercise (Eklund & Crawford, 1994) which are clearly represented by these results.

Findings for the non-exercising sample show that his group was slightly heavier than the exercising group by an average of 4kg pre-pregnancy, although weight differences between the groups remained similar during pregnancy and post-pregnancy the between group weight difference had dropped to around 2kg. The weight discrepancy patterns between the two groups however were different. This differing pattern may provide an explanation for other differences between the groups mean scores for Body Esteem and other demographic variables. Conversely the overall stability of the weight difference between the two groups over time may provide an explanation for the similarity of several scores, especially the SPA mean scores.

There is a continued steady growth in the non-exercising samples SPA scores over the three time periods. The exercising group also had a similar pattern of results. These increased feelings of anxiety associated with concern that one's body may be negatively evaluated are also reflected in the increased dissatisfaction the non-exercising group expressed over time regarding their overall body esteem. However at Time 2 this group did exhibit a very high body esteem score which subsequently returned to a very low level at Time 3. At Time 2 the non-exercising group still had a large weight discrepancy, which is clearly reflected in the SPA score. Yet while body weight has been shown to be a strong predictor of body dissatisfaction (Cash & Pruzinsky, 2002) the body esteem score at this time did not reflect this. While by Time 3 the weight discrepancy had reduced greatly, this still was not reflected in the Body Esteem or SPA

scores at this time. At this point non-exercisers also score below exercisers on the Body Esteem scale (indicative of greater body dissatisfaction).

A probable explanation for these findings may be that while the non-exercisers are privately feeling satisfied with their own post-pregnancy body, particularly at Time 2, they are increasingly aware that other people may be judging them unfavourably now that they are no longer visibly pregnant. However when the weight discrepancy for this group became relatively small at Time 3, body esteem scores for this group decreased greatly and SPA scores increased in a comparable manner. These findings are in agreement with the literature, as weight dissatisfaction is usually associated with increased levels of SPA. On the other hand the decreased body esteem satisfaction contradicts Lantz (1991) and Silberstein et al's (1988) evidence that for women body esteem is partly comprised of weight concern and control. As SPA also represents concerns regarding body proportions, structure and tone (Leary, 1992), it would seem reasonable therefore to expect that SPA scores would parallel the changes in weight discrepancy. But for this group the results do not suggest this. Sample size may be a confounding factor influencing these results.

Knowledge of SPA levels prior to pregnancy may also explain this anomaly. The non-exerciser may have been higher in SPA prior to pregnancy and has returned at Time 3 to a lower level than before pregnancy. So while the findings in this study show SPA scores to be high, comparative to pre-pregnancy scores they may not be. The experience of pregnancy may also have altered their body esteem and body consciousness in a negative direction thereby increasing this groups doubts about their ability to make favourable impressions on others. Such concern regarding the prospect of negative evaluation from others, as seen by the higher SPA scores, may be deterring this group

from undertaking exercise through the stimulation of protective self-presentational actions (Crawford & Eklund, 1994). Most participants were an average of 31 weeks pregnant upon entry to the study and the earlier and often more obvious changes in the body due to pregnancy were not captured by the SPA and Body Esteem scores collected. These may have been able to provide further clarification or explanation of the contradictions evident in the Body Esteem and SPA scores.

Overall there were no significant findings for the non-exercising group. The decreased body esteem and weight discrepancy scores for this group appear to contradict existing research evidence that for women body esteem is partly comprised of weight concern and control. The data may suggest perhaps that pregnancy is a unique factor contributing in some way to changes in the public and private perceptions of body esteem and SPA for women.

Conclusion

SPA is anxiety associated with the fear that others are evaluating a person's physique negatively. Negative relationships have been found previously between SPA and self-esteem and exercise behaviour in a broad range of populations. Positive relationships have been shown to exist between SPA and extrinsic motivations for exercise, particularly those of a self-presentational nature. However there is a paucity of research that has examined the relationship between SPA and exercise in a pregnant population. This study sought to extend existing research and explore these body related issues in a pregnant sample at three time points throughout the course of pregnancy.

Important consistencies were observed with regard to REI and SPA for pregnant exercisers. Examination of the data revealed significant differences over time for self-presentational reasons for exercise, those motives related to the development or maintenance of easily observable physical qualities (body tone, weight, physical appearance). This investigation found moderately significant correlations between extrinsic reasons for exercise and SPA scores at the three time points. As the self-presentational reasons for exercise increased, so to did the SPA scores for the exercising group. SPA has been found to be positively associated with the emphasis placed upon self-presentational reasons for exercise with other populations (Crawford & Eklund, 1994). The emergence of possible systematic SPA-related patterns of responses in relation to the REI responses suggests that self-presentation may also contribute to exercise behaviours and preferences in a pregnant population.

Second, the associations between Exercise Behaviours and Preferences questions and SPA in the exercising group, again although only moderately significant, were largely consistent with what would be expected on the basis of the self-presentational perspective being employed to explain SPA. Questions regarding a focus upon appearance and concerns about being judged while exercising increased over time alongside increases in SPA scores for the exercising group.

Interestingly however, no significant associations were observed between questions probing for preferences for exercising in tight or loose clothing on the Exercise Behaviours and Preferences scale and SPA for the exercisers. In fact these questions produced results that were contradictory to previous findings. Given that these types of questions inherently suggest potential for negative evaluation, it should have been expected that they would be related to SPA as an index of self-presentational concerns

related to physique. This is an interesting contrast that may be explained by body image changes during and after pregnancy. Women post-pregnancy may prefer to exercise in tight clothing even though they experience increased levels of SPA, because the post-pregnancy body is appreciably reduced compared to the pregnant body.

Further examination of the data revealed that, while no significant differences were found, exercise patterns did alter over the course of pregnancy and appear to be reflected in SPA scores. This is an interesting contrast to previous research which has not found any support for a relationship between SPA and exercise frequency and duration in other populations (Crawford & Eklund, 1994) and may be suggestive of some sort of influence of a change in body image as a result of pregnancy.

Finally, some consistencies were observed for the non-exercising group of pregnant women. While the data did not reveal any significant differences over time, it did seem to confirm that body esteem and weight are related as found in previous research (Lantz, 1991; Silberstein et al, 1988). Interesting contrasts were seen between Body Esteem and SPA scores and may be explained by body image changes that occur as a result of specific adjustments made during pregnancy (Cash & Pruzinsky, 2002) that are more pertinent for non-exercising women.

The present study must be viewed with several limitations in mind. First, this study is limited by sample numbers, particularly non-exercisers. This meant the study became largely descriptive in nature and limited the depth of statistical analysis that could be undertaken. Comparisons between groups were also restricted due to small sample numbers in each group. The sample was composed largely of self-selected European females having their first child, thus our findings may not generalise to other

populations. The current study recruited participants from private community ante-natal classes. It is logical to expect that there is some sort of self-selection process involved in enrolling in these types of classes. Hence it is likely that the decision to recruit women solely from this source may have introduced a selection bias affecting results in this study. Most participants were also in their third trimester upon entry to the study, meaning that the earlier and often more major changes during pregnancy were not captured by this sample.

When compared to other investigations, it also appears that the women in this study were atypical in terms of SPA. Examination of descriptive statistics revealed that SPAS scores were considerably lower than those observed by Crawford and Eklund (1994) and also lower than average values obtained by Hart et al (1989). This may be due to the cultural context of this New Zealand sample. Also as both groups SPAS scores were so similar, differences between conditions may have been masked.

The exercise settings used by participants in this study were not largely social settings and so also may have contributed to the narrow range of significant results found particularly regarding the concept of SPA, which represents the anxiety one feels in response to others' evaluations of their physiques and therefore is based upon a social setting. Exercisers in this sample were mainly walking and it was not identified if they were walking alone or with other people. The inclusion of more social exercise settings in future studies is necessary to explore the SPA concept further with this population.

It is suggested that future researchers also engage a more diverse sample of pregnant women, which is larger and gathered from a wider variety of community settings. It is also necessary to recruit a larger non-exercising sample in order to gain a greater depth

of comparison. Future research may also benefit from recruiting participants earlier in their pregnancy and gathering information from non-exercisers regarding reasons for not exercising in order to determine the barriers to exercise for this group. Retrospective information regarding exercise behaviours, preferences and reasons would also enhance subsequent research data as would data regarding SPA levels prior to pregnancy.

In summary, the results of this study indicate that SPA appears to be connected to self-presentational reasons for exercise and the importance of self-presentational reasons changes over the course of pregnancy for exercisers. These findings indicate that self-presentational perspectives may be useful in helping understand exercise behaviour and that SPA may be a useful instrument to investigate this providing that social exercise settings are included. The results of this study were not clear whether SPA may be a factor influencing exercise behaviours, preferences and patterns in pregnant populations.

Considerable consistency has emerged across previous investigations with regard to associations between SPA and questions regarding self-presentational motives for exercise and exercise behaviours and these associations are largely consistent with what would be expected on the basis of self-presentational theoretical perspectives. Hence rather than undermining the potential contribution of self-presentational perspectives for understanding exercise behaviours in pregnant women, these findings raise interesting questions with regard to variables that may moderate or mediate SPA as a result of pregnancy, particularly those related to body image and the associated changes that occur as a result of pregnancy.

Future research may benefit from focussing on the relationship between SPA and reasons for exercise in pregnant populations when compared to non-pregnant samples in order to determine how consistent body image is during this significant time of change for women, particularly considering the importance placed upon the body by western culture. Additional research could also examine other variables related to pregnancy and SPA including number of weeks pregnant, number of children, barriers to exercise and reasons for the exercise types selected.

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APPENDIX A

Information Sheet

Exercise and Pregnancy

You are invited to take part in a study to gather information on exercise participation, motivation and body image in pregnant women. The study will look at the exercise patterns of women during and after pregnancy and whether these patterns relate to how women feel about their body and how these patterns relate to their general health. If you are currently pregnant your participation in this study would be greatly appreciated. This study is part of research being conducted for a Masters degree at Massey University.

If you choose to take part in this research you will be asked to fill in two sets of questionnaires (one while you are pregnant, the other approximately 6 weeks after the birth of your baby) which will take no longer than 20-30 minutes to complete. You will be provided with stamped, addressed envelopes in which to return your questionnaires. You will be required to provide your name and address so that the second set of questions can be posted to you after the birth of your baby. After both sets of questionnaires have been returned, your contact details will be destroyed.

Participation in the research is voluntary. You have the right to choose not to participate. If you do choose to participate you may withdraw from the study at any time prior to completing Questionnaire 2 and without having to give a reason. You may refuse to answer any particular questions. Your participation in the study is confidential and you will not be personally identified by any information used in any reports on this study. A summary of the research findings will be available upon completion of the research. Should you wish to receive a copy please indicate this in the space provided on the questionnaire.

If you have any questions regarding the research please contact the researcher using the contact details provided. If you would like to discuss further any issues this study raises for you, you may prefer to contact your local Plunket centre, GP or LMC.

If you agree to take part in this research please complete the attached questionnaire. Completion of the questionnaire implies you understand your rights and agree to participate. Please use the reply paid envelope to return your forms.

Thank you for your time.

Researcher: Janet Blind
Masters Student

Supervisor: Dr R Fletcher

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Psychology Department
Private Bag 102904
North Shore Mail Centre
AUCKLAND

APPENDIX B

Exercise and Pregnancy Questionnaire

Name: .....

Address: .....

.....

.....

Age: .....

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1. How many weeks pregnant are you:.....

2. What is your expected delivery date:.....

3. Do you already have children?
   - ☐ Yes
   - ☐ No If yes, how many do you have?.....

4. Are you currently working:
   - ☐ Not working
   - ☐ Part time
   - ☐ Full time If you are working, how many weeks pregnant will you be when you stop work? .....

5. What ethnic group do you most closely identify with?
   - ☐ Asian
   - ☐ Indian
   - ☐ New Zealander of European descent
   - ☐ New Zealander of Maori descent
   - ☐ Pacific Island Polynesian
   - ☐ Other (please specify).....

6. Height (cms):.....

7. Weight (kg) at present:.....

8. Weight (kg) before becoming pregnant:.....

Please read the following questions carefully and tick the box corresponding to the statement which most applies to you at this stage in your pregnancy.

9. Has this pregnancy been a positive experience for you so far?
   - ☐ Yes, most definitely
   - ☐ Yes, mostly
   - ☐ Mostly not
   - ☐ Definitely not

10. Have you had any complications or health problems so far that required medical attention?
   - ☐ Yes (please specify if possible).....
   - ☐ No

11. Do you feel at all tense or anxious?
   - ☐ No, not at all
   - ☐ Yes, a little
   - ☐ Yes, a lot

12. Do you feel constantly under strain?
   - ☐ Not at all
   - ☐ No more than usual
   - ☐ Rather more than usual
   - ☐ Much more than usual

13. Do you enjoy your normal day-to-day activities?
   - ☐ More so than usual
   - ☐ Same as usual
   - ☐ Less so than usual
   - ☐ Much less than usual

14. Do you feel less confident in yourself?
   - ☐ Not at all
   - ☐ No different to the way I usually feel
   - ☐ Rather more than usual
   - ☐ Much more than usual

15. Do you feel in control of yourself?
   - ☐ Yes, definitely
   - ☐ No different to the way I usually feel
   - ☐ Somewhat less than usual
   - ☐ Much less than usual

16. Do you look forward with enjoyment to things?
   - ☐ As much as I ever did
   - ☐ Rather less than I used to
   - ☐ Definitely less than I used to
   - ☐ Hardly at all

17. Do you feel capable of making decisions about things?
- ☐ More so than usual
- ☐ Same as usual
- ☐ Less so than usual
- ☐ Much less capable

18. Are you able to concentrate on whatever you're doing?
- ☐ Better than usual
- ☐ Same as usual
- ☐ Less than usual
- ☐ Much less than usual

19. Are you sleeping well?
- ☐ Better than usual
- ☐ Same as usual
- ☐ Less than usual
- ☐ Much less than usual

20. How do you feel about your body shape/size at present?
- ☐ I feel very happy with my body at present
- ☐ I feel OK about my body
- ☐ I feel a little sensitive about my body
- ☐ I feel very sensitive about my body

21. How are you coping with your usual day-to-day activities/routines?
- ☐ Better than usual
- ☐ The same as usual
- ☐ Less than usual
- ☐ Much less than usual

22. Are you currently exercising?
- ☐ Yes If yes, please complete the following tables.
- ☐ No If no, go to question 25.

Type Of Exercise	**Number Of Sessions Per Week**	**Time Spent At Each Session**
Walking		
Running		
Swimming		
Aerobics class (Please specify type).....		
Weights		
Cardio workout in gym		
Yoga/stretch/relaxation class		
Cycling		
Team sport (Please specify).....		
Other (Please specify).....		

Please read the following questions carefully and mark the box corresponding to the statement which most applies to you now.

23. To what extent is each of the following an important reason that you have for exercising at this stage in your pregnancy?

		Not Important						Very Important
		1	2	3	4	5	6	7
A	To be slim							
B	To lose weight							
C	To maintain my current weight							
D	To maintain/minimise body fat							
E	To improve my muscle tone							
F	To improve my strength							
G	To improve my endurance/stamina							
H	To improve my flexibility							
I	To improve my coordination							
J	To improve my health							
K	To cope with stress, anxiety							
L	To increase my energy level							
M	To socialise with friends							
N	To meet new people							
O	To improve my mood							
P	To improve my cardio fitness							
Q	To increase resistance to illness							
R	To maintain my physical wellbeing							
S	To improve my appearance							
T	To have fun							
U	To redistribute my weight							
V	To improve my overall body shape							
W	To alter a specific area of my body							

24. To what extent do the following statements describe your exercise behaviours and preferences at this stage of your pregnancy?

		Prefer not to				Prefer to
		1	2	3	4	5
A	To what extent do you prefer to exercise in tight-fitting clothing?					
B	To what extent do you prefer to exercise in loose-fitting clothing?					

		Not at all				All the time
		1	2	3	4	5
C	How much do you think your body's appearance is being judged by others while you are exercising?					
D	To what extent do you like to have personal feedback from the instructor?					
E	To what extent do you prefer to exercise with a friend?					
F	When you are exercising, to what extent do you think about your appearance?					
G	To what extent do you like co-ed exercise classes?					
H	To what extent are you aware of the presence of members of the opposite sex when exercising?					

24. Continued

		Very negatively 1	2	3	4	Very positively 5
I	How does it affect you when most people in an exercise class are obviously in better shape than you?					
J	How does it affect you when most people in an exercise class are obviously in worse shape than you?					
K	How does it affect you when "spectators" (people not exercising) watch you exercise?					

		Very unimportant 1	2	3	4	Very important 5
L	Is socializing when exercising important to you?					

25. To what extent do the following statements describe how you feel about your body at this stage of your pregnancy?

		Not at all 1	2	Moderately 3	4	Extremely 5
A	I am comfortable with the appearance of my physique/figure					
B	I worry about wearing clothes that make me look too thin or overweight					
C	I wish I wasn't so uptight about my physique/figure					
D	There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively					
E	When I look in the mirror I feel good about my physique/figure					
F	Unattractive features of my physique/figure make me nervous in certain social settings					
G	In the presence of others, I feel apprehensive about my physique/figure					
H	I am comfortable with how fit my body appears to others					
I	It would make me uncomfortable to know others were evaluating my physique/figure					
J	When it comes to displaying my physique/figure to others I am a shy person					
K	I usually feel relaxed when it is obvious that others are looking at my physique/figure					
L	When in a bathing suit, I often feel nervous about the shape of my body					

26. Please indicate how dissatisfied or satisfied you are at present with each of the following areas of your body:

		Dissatisfied				Satisfied
		1	2	3	4	5
A	Face (features, complexion)					
B	Chest					
C	Arms					
D	Stomach					
E	Buttocks					
F	Hips					
G	Waist					
H	Legs					
I	Muscle tone (overall)					
J	Weight					
K	Height					

27. Please indicate how the following statements best apply to you at present:

		Often		Occasionally		Never
		1	2	3	4	5
A	Do you have a feeling of well-being?					
B	How often do you have crying spells or feel like it?					
C	How often do you feel you do not enjoy things any more?					
D	How often do you feel alone or helpless?					
E	How often do you feel that people don't care what happens to you?					
F	How often do you feel that life is hopeless?					
G	Do you tend to feel tired in the mornings?					
H	Do you feel that you are bothered by all sorts of ailments in different parts of your body?					
I	Have you had periods of days or weeks that you have felt you couldn't take care of things because you couldn't get going?					
J	Do you have any trouble getting or staying asleep?					
K	How often do you have trouble sleeping?					
L	Do you have loss of appetite?					
M	When things don't turn out the way you hoped, how often do you blame yourself?					
N	How often do you think about suicide?					
O	Do you feel that life has changed so much in our modern world that people are powerless to control their lives?					
P	Do you wonder if anything is worthwhile anymore?					
Q	How often do you say that things don't turn out the way you want them to?					
R	How often does the future seem uncertain to you?					

28. Please send me a summary of the results

☐ Yes
☐ No

29. Would you like your GP informed of your results?

☐ Yes

☐ No

If Yes, please provide your GP's name and contact details

Please feel free to make any additional comments.

Thank you for your help with this study. The second questionnaire will be posted to you approximately six (6) weeks after your delivery date. In the event that your scores on this Questionnaire cause concern, you will be informed in person and directed to your primary caregiver for any assistance that may be required.

APPENDIX C

Exercise and Pregnancy Questionnaire 2

Dear

Thank you for your participation in the pregnancy and exercise study and filling in the antenatal questionnaire. I hope that everything is going well with you and your baby.

I have enclosed the second part of the study that involves filling in the postnatal questionnaire when your baby is around 6 weeks old. As stated in the first questionnaire, your participation is entirely voluntary and you do not have to answer all or any of the questions.

Thank you once again for your help.

Researcher: Janet Blind
Masters Student

Supervisor: Dr R Fletcher

Massey University Albany Campus
Psychology Department
Private Bag 102904
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AUCKLAND

Postnatal Exercise Questionnaire

Questionnaire No……..

1. Did you have a normal delivery?
   - ☐ Yes
   - ☐ No Please specify if possible……..

2. Did your baby experience any difficulties? (eg. Jaundice, time in special care unit, intensive care)
   - ☐ Yes Please specify……
   - ☐ No

3. How old is your baby ……(weeks)

4. What was your baby's birth weight ……(kgs)

5. Are you having problems with your baby sleeping?
   - ☐ Yes
   - ☐ No

6. Is your baby experiencing any health problems?
   - ☐ Yes Please specify if possible……
   - ☐ No

7. Your weight (kg) at present:……

8. Have you had any complications or health problems during/after the birth that required medical attention?
   - ☐ Yes (please specify if possible)……
   - ☐ No

Please read the following questions carefully and tick the box corresponding to the statement which most applies to you at this stage post- pregnancy.

9. Do you feel at all tense or anxious?
   - ☐ No, not at all
   - ☐ Yes, a little
   - ☐ Yes, a lot

10. Do you feel constantly under strain?
    - ☐ Not at all
    - ☐ No more than usual
    - ☐ Rather more than usual
    - ☐ Much more than usual

11. Do you enjoy your normal day-to-day activities?
    - ☐ More so than usual
    - ☐ Same as usual
    - ☐ Less do than usual
    - ☐ Much less than usual

12. Do you feel less confident in yourself?
- ☐ Not at all
- ☐ No different to the way I usually feel
- ☐ Rather more than usual
- ☐ Much more than usual

13. Do you feel in control of yourself?
- ☐ Yes, definitely
- ☐ No different to the way I usually feel
- ☐ Somewhat less than usual
- ☐ Much less than usual

14. Do you look forward with enjoyment to things?
- ☐ As much as I ever did
- ☐ Rather less than I used to
- ☐ Definitely less than I used to
- ☐ Hardly at all

15. Do you feel capable of making decisions about things?
- ☐ More so than usual
- ☐ Same as usual
- ☐ Less so than usual
- ☐ Much less capable

16. Are you able to concentrate on whatever you're doing?
- ☐ Better than usual
- ☐ Same as usual
- ☐ Less than usual
- ☐ Much less than usual

17. Are you sleeping well?
- ☐ Better than usual
- ☐ Same as usual
- ☐ Less than usual
- ☐ Much less than usual

18. How do you feel about your body shape/size at present?
- ☐ I feel very happy with my body at present
- ☐ I feel OK about my body
- ☐ I feel a little sensitive about my body
- ☐ I feel very sensitive about my body

19. How are you coping with your usual day-to-day activities/routines?
- ☐ Better than usual
- ☐ The same as usual
- ☐ Less than usual
- ☐ Much less than usual

Please read the following questions carefully and mark the box corresponding to the statement which most applies to you now.

20. Are you currently exercising?

☐Yes If yes, please complete the following tables.
☐No If no, go to question 23.

Type Of Exercise	Number Of Sessions Per Week	Time Spent At Each Session
Walking		
Running		
Swimming		
Aerobics class (Please specify type).....		
Weights		
Cardio workout in gym		
Yoga/stretch/relaxation class		
Cycling		
Team sport (Please specify).....		
Other (Please specify).....		

21. To what extent is each of the following an important reason that you have for exercising at this stage post- pregnancy?

		Not Important						Very Important
		1	2	3	4	5	6	7
A	To be slim							
B	To lose weight							
C	To maintain my current weight							
D	To maintain/minimise body fat							
E	To improve my muscle tone							
F	To improve my strength							
G	To improve my endurance/stamina							
H	To improve my flexibility							
I	To improve my coordination							
J	To improve my health							
K	To cope with stress, anxiety							
L	To increase my energy level							
M	To socialise with friends							
N	To meet new people							
O	To improve my mood							
P	To improve my cardio fitness							
Q	To increase resistance to illness							
R	To maintain my physical wellbeing							
S	To improve my appearance							
T	To have fun							
U	To redistribute my weight							
V	To improve my overall body shape							
W	To alter a specific area of my body							

22. To what extent do the following statements describe your exercise behaviours and preferences post- pregnancy?

		Definitely prefer not to 1	2	3	4	Definitely prefer to 5
A	To what extent do you prefer to exercise in tight-fitting clothing?					
B	To what extent do you prefer to exercise in loose-fitting clothing?					

		Not at all 1	2	3	4	All the time 5
C	How much do you think your body's appearance is being judged by others while you are exercising?					
D	To what extent do you like to have personal feedback from the instructor?					
E	To what extent do you prefer to exercise with a friend?					
F	When you are exercising, to what extent do you think about your appearance?					
G	To what extent do you like co-ed exercise classes?					
H	To what extent are you aware of the presence of members of the opposite sex when exercising?					

		Very negatively 1	2	3	4	Very positively 5
I	How does it affect you when most people in an exercise class are obviously in better shape than you?					
J	How does it affect you when most people in an exercise class are obviously in worse shape than you?					
K	How does it affect you when "spectators" (people not exercising) watch you exercise?					

		Very unimportant 1	2	3	4	Very important 5
L	Is socializing when exercising important to you?					

23. To what extent do the following statements describe how you feel about your body post- pregnancy?

		Not at all 1	2	Moderately 3	4	Extremely 5
A	I am comfortable with the appearance of my physique/figure					
B	I worry about wearing clothes that make me look too thin or overweight					
C	I wish I wasn't so uptight about my physique/figure					
D	There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively					

23. (Continued)

		Not at all 1	2	Moderately 3	4	Extremely 5
E	When I look in the mirror I feel good about my physique/figure					
F	Unattractive features of my physique/figure make me nervous in certain social settings					
G	In the presence of others, I feel apprehensive about my physique/figure					
H	I am comfortable with how fit my body appears to others					
I	It would make me uncomfortable to know others were evaluating my physique/figure					
J	When it comes to displaying my physique/figure to others I am a shy person					
K	I usually feel relaxed when it is obvious that others are looking at my physique/figure					
L	When in a bathing suit, I often feel nervous about the shape of my body					

24. Please indicate how dissatisfied or satisfied you are at present with each of the following areas of your body:

		Dissatisfied 1	2	3	4	Satisfied 5
A	Face (features, complexion)					
B	Chest					
C	Arms					
D	Stomach					
E	Buttocks					
F	Hips					
G	Waist					
H	Legs					
I	Muscle tone (overall)					
J	Weight					
K	Height					

25. Please indicate how the following statements best apply to you at present:

		Often 1	2	Occasionally 3	4	Never 5
A	Do you have a feeling of well-being?					
B	How often do you have crying spells or feel like it?					
C	How often do you feel you do not enjoy things any more?					
D	How often do you feel alone or helpless?					
E	How often do you feel that people don't care what happens to you?					
F	How often do you feel that life is hopeless?					
G	Do you tend to feel tired in the mornings?					
H	Do you feel that you are bothered by all sorts of ailments in different parts of your body?					
I	Have you had periods of days or weeks that you have felt you couldn't take care of things because you couldn't get going?					

25. (Continued)

		Often				Never
		1	2	3	4	5
J	Do you have any trouble getting or staying asleep?					
K	How often do you have trouble sleeping?					
L	Do you have loss of appetite?					
M	When things don't turn out the way you hoped, how often do you blame yourself?					
N	How often do you think about suicide?					
O	Do you feel that life has changed so much in our modern world that people are powerless to control their lives?					
P	Do you wonder if anything is worthwhile anymore?					
Q	How often do you say that things don't turn out the way you want them to?					
R	How often does the future seem uncertain to you?					

Please feel free to make any additional comments.

Thank you very much for participating in this study. In the event that your scores on this Questionnaire cause concern, you will be informed in person and directed to your primary caregiver for any assistance that may be required.

Dear

Thank you for your assistance in helping to gather information on factors related to pregnancy and exercise.

As a follow-up I would like to inform you that your scores fall within the range that sometimes indicates an episode of postnatal depression, but this would need to be confirmed by visiting your GP.

Thank you once again for your help and all the best for the future.

Janet Blind
Masters Student
Massey University Albany Campus
Psychology Department
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North Shore Mail Centre
Auckland

Supervisor: Dr R Fletcher
Massey University Albany Campus
Psychology Department
Ph. 443 9700

APPENDIX D

Exercise and Pregnancy Questionnaire 3

Dear

Thank you for your participation in the pregnancy and exercise study and filling in the antenatal questionnaire. I hope that everything is going well with you and your baby.

The study has now been extended and another questionnaire has been added. I have enclosed the third part of the study that involves filling in the postnatal questionnaire again when your baby is around 3 months old. As stated in the previous questionnaire, your participation is entirely voluntary and you do not have to answer all or any of the questions.

Thank you once again for your help.

Janet Blind
Researcher.

Postnatal Exercise Questionnaire (2)

Questionnaire No……..

1. How old is your baby ……(weeks/months)

2. What is your baby's current weight ……(kgs)

3. Are you having problems with your baby sleeping?
   - ☐ Yes
   - ☐ No

4. Is your baby experiencing any health problems?
   - ☐ Yes Please specify if possible…….
   - ☐ No

5. Your weight (kg) at present:…….

Please read the following questions carefully and tick the box corresponding to the statement which most applies to you at this stage post- pregnancy.

6. Do you feel at all tense or anxious?
   - ☐ No, not at all
   - ☐ Yes, a little
   - ☐ Yes, a lot

7. Do you feel constantly under strain?
   - ☐ Not at all
   - ☐ No more than usual
   - ☐ Rather more than usual
   - ☐ Much more than usual

8. Do you enjoy your normal day-to-day activities?
   - ☐ More so than usual
   - ☐ Same as usual
   - ☐ Less so than usual
   - ☐ Much less than usual

9. Do you feel less confident in yourself?
   - ☐ Not at all
   - ☐ No different to the way I usually feel
   - ☐ Rather more than usual
   - ☐ Much more than usual

10. Do you feel in control of yourself?
    - ☐ Yes, definitely
    - ☐ No different to the way I usually feel
    - ☐ Somewhat less than usual
    - ☐ Much less than usual

11. Do you look forward with enjoyment to things?
    - ☐ As much as I ever did
    - ☐ Rather less than I used to
    - ☐ Definitely less than I used to
    - ☐ Hardly at all

12. Do you feel capable of making decisions about things?
    - ☐ More so than usual
    - ☐ Same as usual
    - ☐ Less so than usual
    - ☐ Much less capable

13. Are you able to concentrate on whatever you're doing?
    - ☐ Better than usual
    - ☐ Same as usual
    - ☐ Less than usual
    - ☐ Much less than usual

14. Are you sleeping well?
    - ☐ Better than usual
    - ☐ Same as usual
    - ☐ Less than usual
    - ☐ Much less than usual

15. How do you feel about your body shape/size at present?
    - ☐ I feel very happy with my body at present
    - ☐ I feel OK about my body
    - ☐ I feel a little sensitive about my body
    - ☐ I feel very sensitive about my body

16. How are you coping with your usual day-to-day activities/routines?
    - ☐ Better than usual
    - ☐ The same as usual
    - ☐ Less than usual
    - ☐ Much less than usual

Please read the following questions carefully and mark the box corresponding to the statement which most applies to you now.

17. Are you currently exercising?

☐Yes If yes, please complete the following tables.
☐No If no, go to question 20.

Type Of Exercise	Number Of Sessions Per Week	Time Spent At Each Session
Walking		
Running		
Swimming		
Aerobics class (Please specify type).....		
Weights		
Cardio workout in gym		
Yoga/stretch/relaxation class		
Cycling		
Team sport (Please specify).....		
Other (Please specify).....		

18. To what extent is each of the following an important reason that you have for exercising at this stage in your pregnancy?

		Not Important						Very Important
		1	2	3	4	5	6	7
A	To be slim							
B	To lose weight							
C	To maintain my current weight							
D	To maintain/minimise body fat							
E	To improve my muscle tone							
F	To improve my strength							
G	To improve my endurance/stamina							
H	To improve my flexibility							
I	To improve my coordination							
J	To improve my health							
K	To cope with stress, anxiety							
L	To increase my energy level							
M	To socialise with friends							
N	To meet new people							
O	To improve my mood							
P	To improve my cardio fitness							
Q	To increase resistance to illness							
R	To maintain my physical wellbeing							
S	To improve my appearance							
T	To have fun							
U	To redistribute my weight							
V	To improve my overall body shape							
W	To alter a specific area of my body							

19. To what extent do the following statements describe your exercise behaviours and preferences post- pregnancy?

		Definitely prefer not to 1	2	3	4	Definitely prefer to 5
A	To what extent do you prefer to exercise in tight-fitting clothing?					
B	To what extent do you prefer to exercise in loose-fitting clothing?					

		Not at all 1	2	3	4	All the time 5
C	How much do you think your body's appearance is being judged by others while you are exercising?					
D	To what extent do you like to have personal feedback from the instructor?					
E	To what extent do you prefer to exercise with a friend?					
F	When you are exercising, to what extent do you think about your appearance?					
G	To what extent do you like co-ed exercise classes?					
H	To what extent are you aware of the presence of members of the opposite sex when exercising?					

		Very negatively 1	2	3	4	Very positively 5
I	How does it affect you when most people in an exercise class are obviously in better shape than you?					
J	How does it affect you when most people in an exercise class are obviously in worse shape than you?					
K	How does it affect you when "spectators" (people not exercising) watch you exercise?					

		Very unimportant 1	2	3	4	Very important 5
L	Is socializing when exercising important to you?					

20. To what extent do the following statements describe how you feel about your body post- pregnancy?

		Not at all 1	2	Moderately 3	4	Extremely 5
A	I am comfortable with the appearance of my physique/figure					
B	I worry about wearing clothes that make me look too thin or overweight					
C	I wish I wasn't so uptight about my physique/figure					
D	There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively					
E	When I look in the mirror I feel good about my physique/figure					
F	Unattractive features of my physique/figure make me nervous in certain social settings					
G	In the presence of others, I feel apprehensive about my physique/figure					
H	I am comfortable with how fit my body appears to others					
I	It would make me uncomfortable to know others were evaluating my physique/figure					
J	When it comes to displaying my physique/figure to others I am a shy person					
K	I usually feel relaxed when it is obvious that others are looking at my physique/figure					
L	When in a bathing suit, I often feel nervous about the shape of my body					

21. Please indicate how dissatisfied or satisfied you are at present with each of the following areas of your body:

		Dissatisfied 1	2	3	4	Satisfied 5
A	Face (features, complexion)					
B	Chest					
C	Arms					
D	Stomach					
E	Buttocks					
F	Hips					
G	Waist					
H	Legs					
I	Muscle tone (overall)					
J	Weight					
K	Height					

22. Please indicate how the following statements best apply to you at present:

		Often		**Occasionally**		**Never**
		1	**2**	**3**	**4**	**5**
A	Do you have a feeling of well-being?					
B	How often do you have crying spells or feel like it?					
C	How often do you feel you do not enjoy things any more?					
D	How often do you feel alone or helpless?					
E	How often do you feel that people don't care what happens to you?					
F	How often do you feel that life is hopeless?					
G	Do you tend to feel tired in the mornings?					
H	Do you feel that you are bothered by all sorts of ailments in different parts of your body?					
I	Have you had periods of days or weeks that you have felt you couldn't take care of things because you couldn't get going?					
J	Do you have any trouble getting or staying asleep?					
K	How often do you have trouble sleeping?					
L	Do you have loss of appetite?					
M	When things don't turn out the way you hoped, how often do you blame yourself?					
N	How often do you think about suicide?					
O	Do you feel that life has changed so much in our modern world that people are powerless to control their lives?					
P	Do you wonder if anything is worthwhile anymore?					
Q	How often do you say that things don't turn out the way you want them to?					
R	How often does the future seem uncertain to you?					

Please feel free to make any additional comments.

Thank you very much for participating in this study. In the event that your scores on this Questionnaire cause concern, you will be informed in person and directed to a professional for any support that may be required.

APPENDIX E

Descriptive Figures

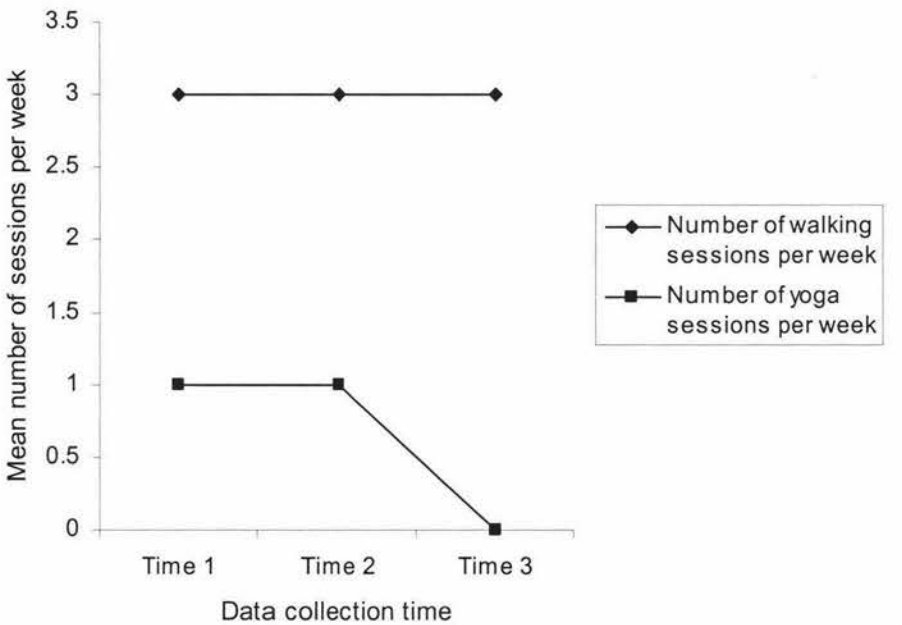

Figure 5. Frequency of exercise sessions over time

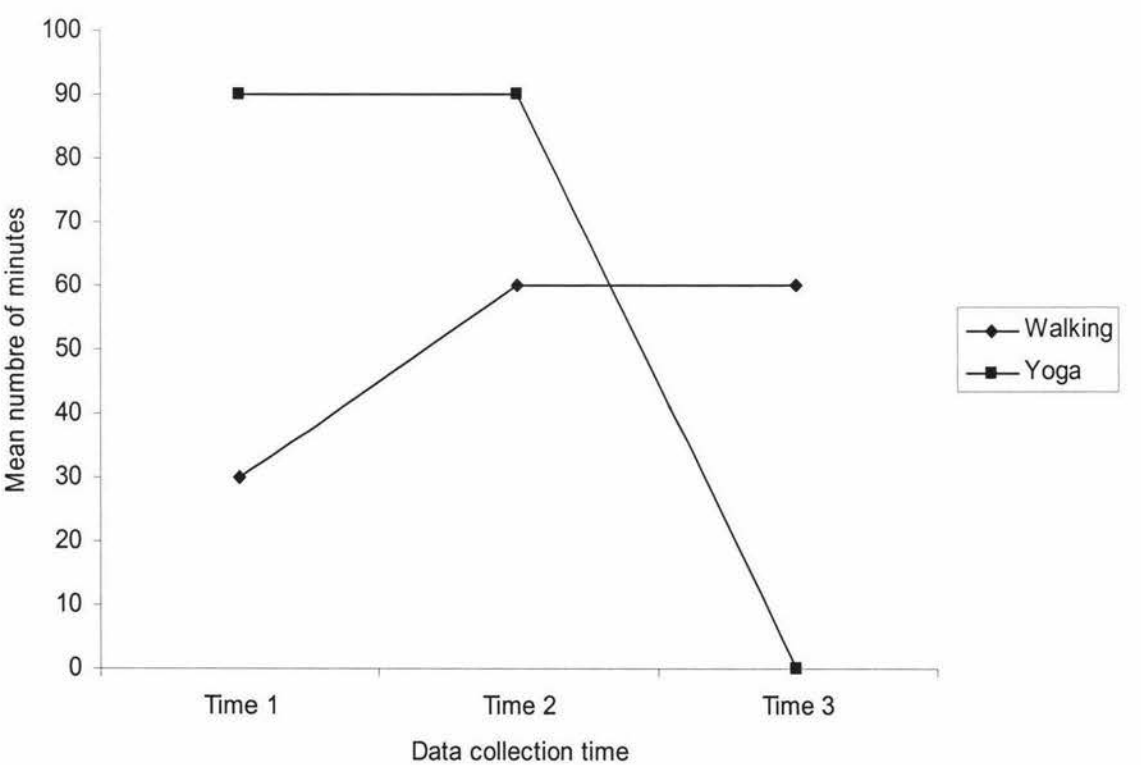

Figure 6. Duration of Exercise sessions over time